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Some Recent Observations on Human and Animal Diseases*

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Mr. President and Gentlemen,

Your Honorary Secretary wrote me a letter in which he stated that at a large and representative meeting of this Association, a resolution was unanimously passed that he should ask me to read a paper before you, as you had pleasant recollections of the paper I gave you some time ago.

If what your Honorary Secretary wrote me is true in substance and fact, I have to thank you very sincerely for your expression of appreciation of my previous scrappy effort and the honour your Association has done me in its desire to have to bear a similar infliction from me at this, your annual meeting.

Knowing something of the habits of Honorary Secretaries, I thought it desirable that you should be informed of this matter in public, lest you later turn and rend me or cast me out into uttermost darkness, for the difficulty I had, after having the temerity to believe your Honorary Secretary (with my usual childlike faith in people in general and him in particular), was to find a basis for discourse.

He had informed me that the choice of subject was left to me and for that I was relieved, for it enabled me to cast about in the common field of medical and veterinary work, the further unified exploration of which will, I am sure, be of assistance to the solution of those intricate problems of immunology which underlie all disease processes, whether in man or animals.

To attempt to deal with any one disease was impossible for me. I am, therefore, offering you a variety of interest by means of extracts from medical literature touching on some of the aspects of several diseases which are met with in man and animals. I give the references for these observations which have largely been culled from *Medical Science*.

The amended title to the paper being

"Some Recent Observations on Diseases affecting Man and Animals."

Rabies.

Is Rabies Heritable?

Remlinger, P., *Ann. de l' Inst. Pasteur*, 1919: 33, 375.
Konradi, D., *Centralbl. f. Bakteriol., etc.*, 1905. Orig. 38, 60.
Konradi, D. Ditto 1908. Orig. 47, 203.
Konradi, D., *Ann. de l' Inst. Pasteur*, 1916. 30-33.

On the ground of the older observations, it has generally been asserted that the virus of rabies occurs but rarely in the blood; the demonstration of the transmission of the disease from the mother to the fœtus through the placenta shows, however, that it must occur at any rate occasionally, for as long ago as 1887 Perroncito and Carita showed that the central nervous system tissue of rabbit fœtuses removed from a rabid mother could communicate the disease when inoculated subdurally. Loir (1903) showed the same thing. In a human case of rabies, Krokiewicz (1902) failed to get a positive result. In 1905, D. Konradi showed that more constant positive results were obtained with guinea pigs, although the virus appeared to have become attenuated, as was shown by the great prolongation of the incubation period, which, in one case, lasted 465 days.

Remlinger, in an extensive study, has worked along the same lines, and has shown that a conceptional rabies does not occur, the transmission from parent to offspring being placogenic.

This passage through the placenta may take place under three conditions, analogous in many ways to that which obtains in the cases of variola and syphilis.

(1) After the death of an animal from rabies, the uterus of which is found to contain fœtuses, the inoculation of the brains of these induced rabies.

(2) Some days before death from rabies an animal throws young, which develop the disease and die.

(3) After inoculation with rabies, an animal gives birth to young, which appear to be healthy and may live for weeks, or even months, although they ultimately succumb to rabies.

During this time and for long after their death, the mother may remain well, although she ultimately dies of the disease.

This was the condition emphasised by Konradi and now confirmed by Remlinger, and it may be utilised to explain the undoubted and mysterious instances in which human beings have developed rabies from the bite of a dog which was not apparently rabid, and which has actually survived its victim.

Several dogs in the same litter, or even a whole litter, may be attacked simultaneously with rabies, although the mother was well and did not die of the disease for a long time, or even not at all.

These facts go far to explain why rabies may occur in animals not known to have been bitten by a rabid animal, and the diagnosis of rabies cannot be excluded by the fact that a dog could not have been bitten by another.

It is known that some dogs cannot be successfully inoculated with rabies, and in the above experiments there is a possible explanation, if one assumes that the virus may traverse the placenta in an amount insufficient to produce the disease, although immunity

*Presented to the Midland Division at Birmingham, on 26th Feb., 1926.

may be set up. There is reason to believe also that in certain cases the rabies virus may long remain latent before manifesting its pathogenic effects.

Indeed, as Remlinger suggests, the ultimate nervous symptoms may not be those hitherto regarded as pathognomonic of rabies.

The interesting question arises here—through how many generations could rabies be thus transmitted in a latent form and what are the factors which determine the latency and cause the infection to produce active results ?

Is there more than one Rabies Virus ?

V. PUNTONI deals with the subject of " Plurality of rabies virus " in *Ann. d'ig.*, 1921, 31, 27.

It is generally held that there is only one virus of rabies, and that the inoculation of the same street virus into various animals of the same species may cause both the furious and paralytic forms of the disease ; in fact, the fixed virus vaccinated against that of the street.

However, the author by chance came across a virus of the street, termed by him No. 223, which showed a peculiar individuality of its own when compared with other virus of the street and with that commonly used in the Antirabic Institute of Rome.

It is interesting to note that the infection caused by virus 223, when inoculated subdurally into rabbits, could be prevented only by an autovaccine, but neither by the usual vaccine prepared with fixed virus nor by other vaccines prepared with virus of the street.

In the *Ann. d'ig.*, 1923, 33, 1, Puntoni continues his investigations on the question of biological plurality of the street virus of rabies and reports that he has been able to find other street viruses, the action of which may be prevented by their corresponding autovaccines, but not by usual vaccines prepared by fixed virus, or by vaccines prepared with different street virus.

However, these biological differences have a tendency to disappear if the viruses are repeatedly transmitted from guinea-pig to guinea-pig.

Attempts at subdividing the rabies virus into different types have so far failed because of technical difficulties.

In the *Annals of the Pasteur Institute*, 1924, 38, No. 3, Manouelian, Y, and Viala, J., give an account of a parasite believed to be the cause of hydrophobia, in the brains and salivary glands of infected animals. The parasites depicted are distinct from Negri bodies and the authors propose the name of *Encephalitizoon rabiei*, in analogy with *E. Cuniculi* of Levaditi in the spontaneous encephalitis of rabbits. It is believed to belong to the protozoa.

Human Rabies without a Dog Bite.

Park and Williams (*Pathogenic Micro-organisms*) describe a case which came under their observation in 1906. A child of six years developed typical rabies in a neighbourhood where there had recently been several cases of canine rabies, but no history of a bite could be obtained. The parents were sure she had not been bitten. Six weeks before, however, the child had fallen in the street and cut her cheek severely on a jagged stone. The wound was cauterised and healed without further trouble. A mad dog had been on that street just before this occurred. It is reasonable to suppose that the stone had on it some of the sputum from that dog, and so the child was infected. Such a case would not occur very often, but the possibility should be considered.

This case raises the question as to how long the sputum of a rabid dog may remain virulent after it drops from the animal.

HUMAN SWINE ERYSIPELAS.

C. PRAUSNITZ, in *Centralbl. f. Bakteriol., etc.*, Abt. I., 1921, 85 (orig.), 362.

After a brief reference to human cases infected with the bacillus of swine erysipelas, *B. erysipelatos suum*, the author gives short details of a girl, aged 10, who suffered from some congenital cardiac defect. She developed fever of a continuous type with an erythema-like rash and joint pains. Endocarditis supervened and she died in six months. No autopsy was permitted. Repeatedly from the blood during life a bacillus was isolated which bore all the characters of the bacillus of swine erysipelas and was agglutinated by homologous serum. Such a serum, in large doses, had no therapeutic effect.

The source of the infection in the patient could not be traced.

E. PARIGI, in *Boll. d. Soc. Med.-chir. di Pavia*, 1922, 34, 283, describes the accidental transmission of swine erysipelas to a butcher. In a few days almost the whole skin of the patient became affected and the temperature rose to 40°C. *B. erysipelatos suis* was cultivated from the blood of the patient, who ultimately recovered.

K. EDEL, in *Nederl. Tijdschr. v. Geneesk.*, 1924, i. 452-5.

V. REDWITZ, E., in *München. med. Wchnschr.*, 1924, 71, 438-40.

RUPPRECHT, R., in ditto, 1924, 71, 590.

MUHLPFORDT, H., in ditto, 1924, 71, 649.

Edel deals with the subject of swine erysipelas in man and states that it would be a mistake to conclude that the disease is less frequent in Holland than elsewhere. Many medical practitioners are unfamiliar with the condition, especially as in most, though not all, cases, swine erysipelas runs a mild course. Three fatal cases, however, have been recorded by Gunther, and one by Prausnitz. At the necropsy of a case in a butcher, ulcerative endocarditis was found, a lesion which is frequently present in the disease in swine. A wound infection, which for a long time was regarded as a disease *sui generis, viz.*, Rosenbach's erysipeloid, is probably identical with swine erysipelas, alike from the clinical, therapeutical and epidemiological aspects. The cause of the infection is almost always inoculation with animal material, such as a scratch with a fishbone or a wound inflicted while killing a sheep or a fowl, and not necessarily a pig.

The symptoms are the same in both erysipeloid and swine erysipelas in man, *viz.*, a slowly-advancing erythema with a livid discolouration in the centre; occasionally there are some tenderness and desquamation, but constitutional disturbance is usually absent. For both conditions there is a therapeutic serum by which the symptoms are rapidly cured.

Von Redwitz, who reports an illustrative case in a man, aged 36, states that erysipeloid, which was first described by Rosenbach in 1884, has within recent years become more frequent, or at least many more cases have been reported of late. In the Munich Surgical Policlinic twenty-six occurred in 1922, and forty-six in 1923. The history is very similar in each case. The patients have almost always been handling the dead bodies of animals or fish.

In only a minority of cases have there been obvious injuries to the skin. As a rule, the patients have not been conscious of any skin lesion, nor has the medical attendant been able to detect any.

The disease usually subsides in 10-14 days, even under purely symptomatic treatment. In a small number of cases it lasts for 4-6 weeks or more. In exceptional cases at the end of a few weeks a distinct swelling of the inter-phalangeal or metacarpo-phalangeal joints occurs with relatively good passive movements of the joints.

The prognosis as a rule is good, though guarded statements should be made as to the duration of the disease. Treatment consists in keeping the affected fingers and hand at rest by means of a splint. In all well-marked cases specific treatment with swine erysipelas immune serum obtained from horses is indicated.

Ten c.cm. should be given intramuscularly. In most cases so treated rapid disappearance of the symptoms takes place within twenty-four hours.

Commenting on Von Redwitz's article, Rupprecht remarks that erysipeloid or swine erysipelas in man is very frequent in lower Bavaria; indeed, in his experience, during the last five years it has been more frequent than whitlow. This is due to the fact that very many pigs are kept in this district, and that even in small houses these animals are slaughtered once or twice a year.

The incubation period seems to vary between one day and three weeks. The duration of the disease in Rupprecht's cases was almost always more than 10-14 days. Most of the patients had treated themselves or had been treated by their doctors with various household remedies for weeks or months without deriving any benefit therefrom.

The treatment which Rupprecht has always found effectual is the application of compresses of sublimate spirit 0.5 : 100. The spirit can be replaced by water, but the duration of the disease is prolonged. Serum treatment, can, as a rule, be dispensed with, especially as the public are shy of this method after the numerous injections required during the war.

Muhlpfordt advocates treatment of erysipeloid by ultra-violet light. Although opinions are divided as to the value of this method in erysipelas, in the more harmless erysipeloid the results of the quartz-lamp treatment have been always harmless in his experience. It is important that the rays should be applied to all aspects of the affected part, *e.g.*, to both the flexor and extensor aspects of the fingers. From one to three applications are required, of fifteen to twenty minutes duration each.

The Comparative Section of the Royal Society of Medicine has recently had this subject under its notice and observations were made by Dr. Parkes Weber, Dr. Max Berg and Mr. R. Stow on this subject of the occurrence of swine erysipelas in man. Although swine erysipelas is a common condition in this country, the infection of man by this organism does not appear to have been recorded.

Malta, Mediterranean or Undulant Fever, and Contagious Abortion of Cattle.

A recent discussion took place at the Comparative Section of the Royal Society of Medicine on this disease and its relation to contagious abortion. I understand that it was agreed there was no relation except that both organisms could effect abortion.

However, Z. Khaled has made a comparative study of bovine abortion and undulant fever from the bacteriological point of view in the *Journal Hygiene* 1921, 20, 319. This author finds that, morphologically, *B. abortus* and *B. melitensis* are identical. The coccoid form is not a constant feature of the culture and a more satisfactory name should be " Brucella "—thus covering the coccoid and bacillary form.

B. abortus cannot be distinguished from *B. melitensis* by cultural, biochemical or agglutination tests. From absorption tests the author concludes that *B. melitensis* may be a substrain of *B. abortus*. Dose for dose, *B. abortus* is much less virulent for guinea-pigs than *B. melitensis*, the ratio being approximately 1 : 6. In one experiment, a *Macacus rhesus* immunised with *B. abortus* was protected against an injecting dose of *B. melitensis*, which in a control monkey (*M. sinicus*) produced a definitely febrile state.

E. Burnet, in *Compt. rend. Acad. d. Sc.*, 1924, 178, 154, deals with the problem of the protection of *B. abortus* in man and apes against *Mic. melitensis*.

Two healthy male adults, who volunteered for the experiment, received heavy subcutaneous doses of living *B. abortus* and some months later, a similar inoculation with living *M. melitensis*. Neither showed any symptoms of infection with either organism. They both developed agglutinins towards the two organisms after the first inoculation with *B. abortus*. A similar experiment on two apes gave no result of any kind in one and produced some agglutinins towards both organisms in the other.

The author therefore claims that *B. abortus* is not pathogenic to man and apes and immunises both against *M. melitensis*.

J. Skarić, in *Ztschr. f. Hyg. u. Infektions Krankh.*, 1922, 95, 358, confirms the close relationship between *M. melitensis* and *B. abortus* which has been emphasised particularly by American writers. The action of

B. abortus in man is still unsettled and the author thinks that it is not likely to be pathogenic. He cites the case of certain districts in Lower Austria in which cattle abortion was common, although there were no reports of any possible action in human beings. *The serum of human beings who had drunk the milk of cows suffering from abortion agglutinated M. melitensis.*

B. POLETTINI, in *Ann. d'ig.*, 1922, 34, 701, discusses the relations between *B. melitensis* and *B. abortus*, and finds that these two organisms, although endowed with the same cultural characteristics and the same pathogenic power for guinea-pigs, give different serological reactions. These are not very marked, but constant, and sufficient for distinguishing two given strains from one another.

G. FICAI, and ALESSANDRINI, A., in *Ann. d'ig.*, 1925, 35, 1, discuss septicæmia in man due to *B. abortus* in man. This question is discussed from the historical, clinical, epidemiological and experimental points of view. The authors' conclusions are as follows: In spite of many statements to the contrary, *B. abortus* (Bang) and *Micrococcus melitensis* (Bruce) can be distinguished from one another owing to the existence of certain morphological, biological and serological differences. In comparison with the "anti-Bruce" agglutinins, the anti-Bang agglutinins are thermostabile. There are sera which agglutinate only *B. abortus*—that is to say, do not contain group agglutinins, for *Micrococcus melitensis*. *B. abortus* can occasionally be recovered in pure culture from the blood and morbid foci of human cases.

THEOBALD SMITH, in the *Jl. Experim. Med.*, 1925, 41, 639-47, describes a pneumonia associated with *Bacillus abortus* of Bang in fœtuses and newborn calves.

The author points out for the first time that a pneumonic condition occurs in fœtuses and newborn calves due to *B. abortus*. Such pneumonic lesions may maintain *B. abortus* in the body for as long as a month.

FLEISCHNER, E. C., VECKI, M., SHAW, E. B., and MEYER, K. F., in the *J. Infect. Dis.*, 1921, 29, 663, discuss the pathogenicity of *B. abortus* and *B. melitensis* for monkeys. It is pointed out that since 1918 it has been shown by a number of American workers that *B. abortus* and *B. melitensis* are closely related morphologically, biologically and serologically, and the behaviour of the two organisms in the body of monkeys described. It is shown that virulent strains of *B. abortus* in sufficiently large doses are pathogenic for these animals, although *B. melitensis* is far more invasive. Following an intravenous inoculation of *B. abortus*, agglutinins appear in the blood of monkeys and they may show an intermittent type of fever and lose weight. Infection may also be induced *per os*.

TULARÆMIA.

T. S. SHELTON, in the *J. American Med. Assn.*, 1925, 84, 1019-20, deals with Tularæmia in man and animals.

Tularæmia was described in 1912 as an epizootic in ground squirrels in Tulare County, California.

It was not, however, reckoned to be a disease of man till 1922, but since that time something like 300 cases have been noted in Utah, Montana, Wyoming, New Mexico, N. Carolina and Washington, D.C. Three cases of the disease were reported in London in bacteriologists working with living cultures of *B. tularense*, the causative organism of the disease.

It has been shown by Francis that in nature the disease is often transmitted from rabbit to rabbit by the rabbit louse (*Hemodipsus ventricosus*) and the rabbit tick (*Dermacentor andersoni*) neither of which bites man. The transmission from the rabbit to man occurs through the blood sucking fly, *Chrysopsdiscalis*, or by handling infected rabbits. Shelton, writing from Richmond, Virginia, reports a case in a woman aged 73, who was seized with acute illness associated with high fever and pain over the right iliac crest and distension of the abdomen. Enteric fever was suggested, but negatived by bacteriological examination. Agglutination tests with *B. tularense* showed a positive reaction in a dilution as high as 1 : 25,600. A small swelling appeared on the finger on the fifth day of the disease, and this was connected with a needle prick some days after the patient had dressed a rabbit which her cat had caught.

W. PERRY and LAMB, in *J. Amer. Med. Assn.*, 1914, 63, 2,041, report two cases of conjunctivitis and lymphadenitis in man due to this bacillus, as well as an epidemic among wild rabbits.

CATS AND HUMAN INFECTION.

Cats and Diphtheria, etc.

No dissertation on human and animal diseases could be regarded as complete unless reference was made to the question of the transmissibility of diphtheria by cats. First mooted, I believe, by Klein, the subject has been discussed positively and negatively since, as we shall see.

PARK and WILLIAMS (*Path. Micro-organisms*, 1924), state that, in spite of its pathogenic qualities for animals, true diphtheria occurs in them with extreme rarity. As a rule, supposed diphtheritic inflammations in them are due to other bacteria which cannot produce disease in man.

The cat is the only animal that we have known to contract true diphtheria from contact with the disease.

COBBETT reports a case in a colt.

W. G. SAVAGE, in the *J. Hyg.*, 1920, 18, 448, deals with the subject of cats and human diphtheria.

It has been a common belief for some years, especially in this country, that cats may suffer from diphtheria, and that they not uncommonly convey the disease to human beings. Savage, in his interesting paper, has analysed all the available *data* and concludes that this view is entirely without foundation. It is true that cats can be infected with diphtheria bacilli injected into them or they may die from inoculation of diphtheria toxin. Normal cats may also harbour in their throats bacilli which present a striking morphological resemblance to Loeffler's bacilli, as has been demonstrated by the author, but the occurrence of a definite diphtheria naturally, among cats, is not proved. In four instances, personally investigated by the author, only one showed an organism which

might possibly have been a non-pathogenic diphtheria bacillus. In the other three, organisms resembling the diphtheria bacillus morphologically turned out on cultivation not to be that micro-organism. Although massive doses of living cultures were applied to the throats of kittens, it was found impossible to infect them, although, injected subcutaneously, two of the cultures killed kittens.

Feeding experiments were also ineffective, as were intra-nasal applications. The secretion from the mucous membrane of cats appears to be particularly unfavourable or inimical to the establishment of true diphtheria bacilli. In view of Savage's contention that there is no foundation for the popular belief that cats may suffer from diphtheria, the case reported by Simmons (J. S. Simmons, *Am. J. M. Sc.*, 1920; 160, 589-94, on virulent diphtheria bacilli carried by cats) is of considerable interest.

The patient was an elderly lady who developed a fatal attack of faucial diphtheria after fondling a cat which had been ill one week before her illness began. The cat was said to have had a croupy cough, to have been unable to swallow food, and to have become very thin. Throat cultures from the cat and from the patient showed morphologically similar organisms resembling diphtheria bacilli, and their virulence for guinea-pigs was the same. The cat was killed, and a *post-mortem* examination revealed a small ulcer covered with a yellowish membrane on the upper surface of the left nasal fossa, cultures from which yielded diphtheria bacilli. No lesions in the internal organs were found.

A second cat which had played with the first and yielded a throat culture showing morphologically typical diphtheria bacilli, died after eight days confinement in a cage, and *post-mortem* showed small membranous patches on the vocal cords, from which virulent diphtheria bacilli were grown.

The history of contact, dates of infection, and bacteriological findings suggested that the first cat was the source of infection of the patient as well as of the second cat, though this could not be absolutely proved. It was certain, however, that both cats were carriers of virulent diphtheria bacilli and were therefore a danger to human beings.

R. G. Perkins and Spreng, D. S., in the *J. Infect. Dis.*, 1921, 29, 513; and 1922, 30, 505, deal with organisms of the *B. lactimorbi* group found in throat cultures and simulating *B. diphtheriæ*.

B. lactimorbi is an organism found by Jordan and Hanis (1909) in connection with milk sickness.

The interest of this organism is its superficial resmblance to *B. diphtheriæ*. It is, however, a motile sporing organism, which is Gram negative. Polar staining is very marked, and the microbe may closely resemble the C type of diphtheria in Wesbrook's classification. It was found in rather less than 1 per cent. of throat cultures from suspected cases of diphtheria, and it was found to persist for long periods. The authors also describe its occurrence in cultures taken from the throats of seven cats out of twenty-five examined. They think that this may explain some of the alleged finding of *B. diphtheriæ* in these animals.

Cats and Influenza.

T. M. Rivers and Bayne-Jones, S., in the *J. Exper. Med.*, 1923, 37, 131, describe some influenza-like bacilli isolated from cats.

The authors have made a study of six influenza-like cultures obtained from the throats of normal cats.

They were found to grow on a medium to which an autoclave-labile substance (from yeast) had been added as an accessory factor. There was no growth on ordinary media. The bacilli were believed to be similar to *B. parainfluenzæ* isolated from man.

Respiratory Infection and Septicæmia in Cats due to the Hæmolytic Streptococcus.

S. Bayne-Jones, in the *J. Infect. Diseases*, 1922, 31, 474, gives an account of an epizootic of acute respiratory disease which broke out in twenty-five cats and killed all but two within fifteen days.

A hæmolytic streptococcus was isolated from the trachea of two and the blood of seven of the affected animals. At necropsy, a green muco-purulent exudate was found filling the nasal cavities and extending down the trachea to its bifurcation. There was no evidence of pneumonia. All the strains of hæmolytic streptococci isolated had identical reactions. They caused the beta-type of clear hæmolysis in blood agar, failed to ferment mannitol and inulin, produced a final Ph of 4.8, and were unable to decompose sodium hippurate to benzoic acid and glycocoll. Although the streptococci resembled the human types of hæmolytic streptococci more closely than the bovine, they differed from both immunologically. The streptococci soon lost their ability to produce disease when introduced into the noses of cats, but even after a number of transfers in broth, intravenous injection killed cats in seventy-two hours.

Glanders.

Stanton, A. T., Fletcher, W., and Kanagarayer, K., in the *J. Hyg.*, 1924, 23, 268-76, describe a disease called Melioidosis, giving a description of two fatal cases of the condition which resembles glanders and affects man and rodents.

The latter are regarded as possibly constituting a natural reservoir of the virus. The ætiological factor of this condition is said to be *Bacillus whitmori*, named after Whitmore, who first (1913) recognised the disease as existing in Rangoon.

The name *Melioidosis* was given in 1921 by Stanton and Fletcher, its origin being from melis which, according to the authors, was used by ancient Greeks for a variety of conditions resembling glanders.

Of the two fatal cases described in the present paper, one was a robust Tamil, aged 40, who developed fever and consolidation of both pulmonary bases and died in three weeks. At the autopsy, suppurating nodules were found in the lungs and liver. The spleen was enlarged and contained septic infarcts. Ulcers were present in the cæcum, and yielded cultures of *B. whitmori*. Similar cultures were also found in the

lungs, spleen , liver and gall bladder, and were pathogenic for guinea-pigs.

The second case was a European, aged 42, who died with fever, vomiting and diarrhœa.

Two large abscesses of the liver and some ulcers of the cæcum yielded *B. whitmori*. Rats inoculated with cultures died with acute general sepsis. A pony sustained a local lesion, but recovered.

In the *J. Hyg.*, 1925, 23, 347-63, these authors continue their work on melioidosis, a glanders-like disease due to *B. whitmori*, and find that it is impossible to distinguish the lesions of this disease from those of glanders, either macroscopically or microscopically. Mallein was applied to a human case of melioidosis and gave a positive reaction with definite fever and a local reaction. For the purposes of study, fourteen strains of *B. whitmori* were compared with five different strains of *B. mallei*. Serologically, the reactions indicated that the strains of *B. whitmori* were homogeneous, whereas those of *B. mallei* were divisible into two groups. The first of these was found to be very closely related to *B. whitmori*, whereas the three strains in the other groups showed marked differences. Cultures of *B. whitmori* differed when grown on agar. In the case of some strains, the growth was corrugated, In others it was distinctly mucoid, and young cultures of the latter were indistinguishable from *B. mallei*.

Bacillus whitmori, although resembling *B. mallei* morphologically, was found to be motile. The authors believe that the causative organism of glanders is not always one and the same bacillus and that a group of organisms has been classed under the designation of *B. mallei*. *B. whitmori* is a member of this group, which has been found in rodents (rabbits, guinea-pigs and rats) and in man, and especially in the latter as an acute disease.

Glanders Vaccine.

Park and Williams (*Pathogenic Micro-organisms*) state that as the indiscriminate use of vaccine causes confusion in the blood tests of horses, it is not now being distributed by the Health Department of the City of New York.

In man the therapeutic value of vaccine is not yet fully determined. But few cases so far have been reported—one by Bristow and White and one by Cramp, recovered after the use of an autogeneous glanders vaccine.

The use of mallein in man subcutaneously has been reported in six cases by Robins. In one it gave a reaction and in three it was of supposed benefit therapeutically.

Anti-body formation in the Mule in response to Inoculations of Mallein.

Brocq-Rousseu, Forgeot, et A. Urbain, in *Annales de l'Institut Pasteur*, 1924, 38, No. 4, p. 420-6, deal with this subject. Inoculations of mallein into the mule lead to the formation of anti-bodies within 5-7 days and the latter disappear between the 37th and 113th day. It follows that for the diagnosis of glanders by the complement deviation test, blood must be removed within five days of an injection of mallein or after the 113th day.

Experimental Investigations on the Elimination of B. mallei through Bile and the action of this on it.

R. Bozzelli, in *Ann. d'ig.*, 1924, 34, 104, states it has not been possible to find *B. mallei* in the bile of guinea-pigs inoculated either endoperitoneally or intravenously with cultures of this germ and killed after 1, 2, 5, and 10 days. Bile has presumably a neutralising effect on *B. mallei*. After the inoculation of bile from infected animals into others, a transient hyperleucocytosis is observed; this, however, is due to the bile itself, because it can be obtained also by the use of bile from normal animals.

Human Paratyphoid Fever from Mutton.

Bruns, Hayo u. Gasters (*Ztschr. f. Hyg. u. Infektions Krankh.*, 1920, 90-263), give an account of a very large epidemic of paratyphoid fever in the Essen district, in a place of over 4,000 inhabitants, of whom about half were affected. There were forty to fifty severe cases and at least three, possibly four, deaths.

The origin of the epidemic was traced with certainty to the flesh of sheep which had to be slaughtered on account of illness originally alleged by veterinary surgeons to be due to the excessive consumption of salt. The carcases were officially passed as healthy, the meat being distributed to the inhabitants on June 28, 1919. Within a few hours large numbers fell ill with fever, vomiting, colic, severe diarrhœa, and cramp in the legs.

By July 4, *Bacillus paratyphosus B.* had been isolated in large numbers from the incriminated flesh, although, when inspected, it appeared perfectly fit for human consumption. In three elderly people, who succumbed to the disease, paratyphoid bacilli were easily found both in the bowels and in the viscera and glands. A fourth fatal case was not so certain. It was that of a child, three months old who, however, had suckled its mother, then suffering from paratyphoid fever. The bacilli found in the human cases were identical with those isolated from the flesh of the affected sheep.

These animals belonged to a flock numbering about 300, of which, within four or five weeks, 160 died or had to be slaughtered on account of a disease which was associated with fever, wasting, weakness and stinking diarrhœa. There was reason, however, to believe that the survivors of the flock had also been extensively infected. Autopsies made on manifestly diseased animals revealed the signs of acute enteritis; paratyphoid bacilli were easily isolated from the viscera. The source of the epizootic was not definitely cleared up. It was ascertained that the flock had been brought from Bavaria on June 23, and were several days on the way packed in railway vans under very defective sanitary conditions. Within a few days of their arrival in Überruhr, where they were closely confined in pens, they began to suffer and some had to be destroyed. The important question whether, in the sheep, the disease was an enteritis or a general sepsis could not be determined because, before the in-

vestigations on this point were undertaken, the epizootic had largely subsided.

Paratyphoid bacilli were not cultivated from the blood during life. The recovery, however, of bacilli from the flesh indicated a general infection rather than a local enteritis.

An interesting aspect of this report is the demonstration that the sheep actually suffered from the same disease which affected the human cases.

It has often been believed that, in cases of meat poisoning, the flesh of the animal was not in itself infective, but became so from human or other contamination after the animal had been slaughtered.

A further item of great rarity is that the flesh of sheep caused paratyphoid in man.

Epidemics of meat poisoning from mutton are rare. In an analysis of the sources of epidemics of meat poisoning, Schneidemühl concluded that, in point of frequency, cow's flesh came first with 62 per cent., calf's flesh 21 per cent., ox-flesh 5 per cent., pig's flesh 5 per cent., horseflesh 3 per cent., sheep's flesh 0 per cent.

The few experiments that have been made also indicate that sheep cannot be readily infected with paratyphoid bacilli unless massive doses of cultures are administered to them.

E. O. Jordan, in the *J. Infect. Dis.*, 1925, 36, 309-29, deals with the differentiation of the paratyphoid-enteriditis group and deals with strains from various mammalian hosts, investigating a large series of strains of bacilli of the paratyphoid-enteriditis group from horses, rodents, pigs, cattle and sheep. No strain of *paratyphosus A* was found, an experience confirming the view that the source of this micro-organism is always human. In the horse a specialised member of the group occurs and has been called *B. abortivo equinus*. In rodents (mice, rats, guinea-pigs, rabbits) two types are met with, *viz. B. enteriditis* and bacilli closely related to, but agglutinogenically not identical with, *B. paratyphosus B*. In the pig, as in the horse, definite specialisation has occurred, and out of fifty cultures thirty-eight were culturally and serologically of the *B. suipestifer* type. Besides this, however, other members of the group may occur in pigs. In the author's series ten were of the *B. paratyphosus B.* type.

Bovine strains are usually either *B. enteriditis* or *B. aertrycke*. Ovine strains belong to the Aertrycke type.

The most cosmopolitan member of the whole group appears to be *B. enteriditis*, which has been found in human, porcine, bovine and rodent infections.

The Active Treatment of Cutaneous Anthrax.

The course taken by cases after apparently similar inoculations differs widely; there appears to be nothing in the earliest stages after infection to distinguish the case which will recover without any active treatment, from the case which will terminate fatally within a few days.

Early cases subjected to excision of the malignant pustule, or its destruction by cautery, get a painful excavated ulcer, which heals slowly and leaves an ugly scar. But this surgical treatment fails to check the course of severe cases. The cautery has been advocated in preference to the knife, in order that a protecting zone around the pustule may not be destroyed.

Injections of carbolic acid or of perchloride of mercury into and around the pustule fail to arrest the spread in acute cases. It may be argued that such antiseptics do not destroy all the infective organisms, while they arrest the proliferation and kill the cells which are forming the protecting zone. The active medical treatment is also a doubtful matter.

A pessimistic view is that the patient produces his own antitoxin, which failing, his case is hopeless.

The specific serums were considered insufficient until Sclavo prepared asses' serum. But it is stated that a non-specific serum, especially bovine serum, used freely, is as good as, if not better than, Sclavo's serum.

Trials have been made by treating the anthrax septicæmia by intravenous infusion of antiseptics—hypochlorite of soda, salvarsan, perchloride of mercury—but there is as yet an absence of evidence as to whether such a line of treatment is worthy of further trial.

In view of the number of cases of cutaneous anthrax which are being reported, *e.g.* inoculations from shaving brushes, it seems urgently advisable that every case in which there are grounds for suspecting an inoculation should be immediately and freely treated with any serum which is at hand, whether it be Sclavo's serum or not. The extension of anthrax to the blood stream must be anticipated. Provided there is treatment by serum at the earliest moment, surgical interference appears to be contra-indicated; the pustule will dry up and disappear without leaving a scar. The serum treatment should be continued until all induration has gone. In the severe cases, where the anthrax bacilli have reached the circulation, the treatment by large quantities of serum may perhaps be fortified by an intravenous infusion of an antiseptic-sodium hypochlorite or salvarsan. When no serum is obtainable for the moment, one or other of the above antiseptics should be injected without delay.

In 1917, Kraus and his colleagues in Buenos Ayres found that after being used for twenty years, the specific serum of Sclavo remained a very doubtful remedy. The action of this serum was found to be very variable, as if the standardising had been vague. Kraus first succeeded in obtaining regular results after inoculation by using guinea-pigs, animals relatively insusceptible to anthrax, and by selecting only small guinea-pigs weighing between 600-800 grammes. These were carefully dosed with virulent cultures, and then Kraus found that the normal serum of calves produced as good a passive immunity in his guinea-pigs as did the serum of oxen which had been already immunised against anthrax.

Following upon this, normal bovine serum was found as active an immunising agent as that from immunised oxen. Thereupon non-specific bovine serum was used for patients in doses of 10-30 c.cm., even 40-50

c.cm. being injected in intense cases. In a series of fifty cases no death occurred; among a second series of ninety-six cases there was one death, *i.e.* among the 146 cases of cutaneous anthrax treated with simple bovine serum in Buenos Ayres the death rate was only 0.68 per cent.

The ox serum was prepared by heating it twice to 56°C. for half-an-hour each time, by which any toxic effects were eliminated. It did not then cause serum sickness, as did horse serum.

The non-specific serum was thought to produce a non-specific protein reaction accompanied by a transient elevation of temperature and leucocytosis.

Hyman and Leary in the United States reviewed the treatment and, as compared with the results obtained by Kraus with simple bovine serum freely used, they found that the mortality of cases not so treated according to reports varied; the average mortality for cutaneous anthrax inoculated on the face was 40 per cent. They treated one severe case successfully with non-specific bovine serum, but their patient was not proved to have had anthrax bacilli in the general circulation.

Brown and Simpson reported on twenty-five cases among workers in a tannery in Massachusetts. There were three deaths. Excision proved less satisfactory than an expectant treatment, *viz.* a stimulating diet and perchloride fomentations.

Neve stated that in Kashmir anthrax was common and carried off thousands of cattle, a prophylactic serum not having been available.

Between 1900 and 1919 there had been seventy-five cases of cutaneous anthrax in hospital with seven deaths (9.3 per cent.); 40 per cent. of the pustules affected the upper extremities, 32 per cent. the head and neck, 12 per cent. the back, the remainder the chest, abdomen and lower limbs. All occurred in males who had been engaged in skinning and cutting up animals dead of anthrax. The pustules might be single and large, up to 5 inches in diameter or multiple up to six.

He burnt the pustule with a red hot button cautery which encouraged local leucocytosis; excision and incision were considered dangerous as opening up fresh areas of absorption. When the anthrax, became generalised the case was considered irremediable and hopeless.

Pijper reported from the Transvaal that salvarsan injection alone had been used in two cases. On a farm more than twenty of the cattle had died of anthrax. A white woman's hands came in contact with the blood of an animal dead of anthrax, and she developed a sore between the thumb and fingers. The next day the whole hand was swollen. On the third day the sore was diagnosed to be due to anthrax inoculation. Four hundred mgm. of salvarsan was administered by intravenous injection and the sore protected by dressings. The temperature became normal on the fourth day after the injection, and after some weeks of slow healing a slight scar only was left.

At the same time, a native on the farm scratched the back of his hand with a sharp piece of bone whilst cutting up an animal dead of anthrax. A pustule similar to the former case developed and 600 mgm. of salvarsan were injected on the third day. The same results followed, the sore slowly healed.

Schultz noted five cases due to inoculation from a shaving brush causing a pimple to start on the neck, but with an entirely different course in the five patients.

A man aged 23, after using a new brush for shaving, developed a pimple on July 14 which, on July 17, was diagnosed as cellulitis of the neck. An incision was made and subsequently anthrax bacilli were discovered.

He died on the 18th from general infection by anthrax.

The second case, after using a new shaving brush, developed a pimple on the neck on July 24. On July 27 anthrax was diagnosed; 50 c.c. of anti-streptococcal serum were administered intravenously and sulphate of magnesia fomentations applied. The pustule was neither incised nor scraped. By July 31 he was recovering so that only a small depressed scar was left.

The presence of anthrax bacilli in the blood is generally a sign that the case is going to die. However, a patient who was actively treated by Graham and Detweiler recovered.

He was a tanner, aged 36, who had been inoculated three days beforehand through an insignificant wound. A small itching pimple developed on the neck; it was surrounded by vesicles containing brownish fluid in which anthrax bacilli were found.

Induration of a livid colour developed around: 40 c.c. of anthrax serum were administered intravenously; on the third day after that the indurated zone was injected with 40 per cent. alcohol. On the fourth day a wide incision of the pustule was made under a general anæsthetic. On the fifth day there was no improvement. On the sixth day anthrax bacilli were found in the blood. On the seventh day 100 c.cm. of chloramine, T., Dakin, were administered along with 80 c.cm. of anti-anthrax serum. A rigor followed and then relief set in. On the eighth day bacilli were not found in the blood. There was slow healing of the wound and œdema persisted in the skin around for a good while.

In relation to the action of neosalvarsan on anthrax bacilli, F. Tallo in *Riforma med.*, 1920, 36, 1,145, has done some work on this subject from which it is concluded that:—

Neo-salvarsan diluted with bouillon has *in vitro* a strong bactericidal action on *B. anthracis* from cultures. This action is very little altered by the substitution of the bouillon with blood serum in the mixture of bacilli and drug. But in the same experimental conditions neo-salvarsan appears to have no action on *B. anthracis* from the animal organism, *viz.* when provided with a capsule.

Charlotte Vincent, in the *Jl. Infect. Diseases*, 1922, 31, 499, gives an account of the recovery of

B. anthracis from the shaving mug of a man who suffered from anthrax. No anthrax bacilli were found in the shaving brush, but it was supposed that spores from the brush had adhered to the mug.

We will now consider—

The (a) Specific, (b) Chemical, Treatment of Anthrax. (ADRIANUS PIJPER, of Pretoria, deals with this subject in *The Lancet*, of Jan. 9, 1926).

Specific Treatment—Serum.

The orthodox specific treatment of anthrax is by means of anthrax serum, with which the names of A. Sclavo, E. Marchoux and G. Sobernheim are associated.

Its method of action is unexplained, and it has not been shown to possess bactericidal properties, at least not *in vitro*.

It certainly contains agglutinins and bacteriotropins, and the presence of antitoxins seems likely. The serum is produced in animals (sheep, asses or oxen) by means of injections of attenuated anthrax virus, followed by injections of virulent cultures. Good results have been observed with this serum in many cases, especially by Sclavo. At the 1924 session of the Health Committee of the League of Nations, various members testified to the excellent results obtained by the use of anthrax serum in their respective countries.

It has proved effective even during the last stages of the disease (D. Ottolenghi). In view of these results, the members of the Committee suggested that the time had come to undertake investigations for its titration. The exact value of anthrax serum is difficult to gauge where so little is known about the virulence of the infecting material, and the standardisation of the serum has not yet been undertaken. It may be hoped that the keeping qualities of the serum, especially under tropical conditions, will be included in the projected investigations.

The application of the serum, when available, is certainly indicated in all stages of the disease. It must be remembered that good results can only be expected from really large doses. At least 30 c.cm. should be given the first time, preferably intravenously. The daily doses may then be made smaller, and can be given subcutaneously.

Acting on these principles, Sclavo succeeded in reducing the mortality, calculated from a large number of cases, from 24 to 6 per cent. Some recent authors advocate very large doses, and these in combination with excision. From the nature of the disease it is quite likely that cases will occur where serum is not available, or at least not readily available, in sufficiently large quantities. Even then surgical measures should be avoided.

R. Kraus, working in South America, claims that the serum of normal, untreated sheep and cows possesses protective and curative properties against anthrax infection, which are quite comparable to those of the specially prepared serum.

These observations, when put to the test by others, have not been confirmed, but quite recently Kraus has again maintained that his observations, based both on clinical and laboratory experience, were correct.

Chemical Treatment.

"Auramine" or "argochrom," by injection, in man, have not yet got beyond the discouraging stage of "encouraging results."

Salvarsan: Treatment with salvarsan (or substitutes) was inaugurated by F. Becker. Although splendid results were obtained by him, and shortly afterwards by others, this form of treatment has not come into general use, nor has it received much encouragement from writers of text books.

In medical journals may be found an occasional report on the excellent results obtained through the use of this drug. Eurich only advises its use when serum fails or is unobtainable. Quite recently C. M. Rovsing has again emphasised the virtues of neosalvarsan, but the drug has not received the attention which it deserves. In 1918, Pijper introduced this form of treatment into South Africa. It was then used in two cases, and these not only survived their infection, but made a particularly rapid recovery. This was all the more striking, because in the preceding year, working in the same district, he had attended two similar cases and, in spite of surgical measures, both were dead within a week. It must be added that anthrax serum was not then, and probably is not now, available in South Africa, or at least not readily available.

During the last few years, at the Pretoria Hospital, the value of salvarsan treatment has been tested. Since 1921 all cases of anthrax entering the hospital have been treated exclusively with salvarsan, comprising over forty consecutive cases, and there has not been a single death. This, however, does not include cases of pulmonary anthrax. Some cutaneous injections, however, were very severe, and one or two were admitted in what seemed a moribund condition. A striking instance was that of a youth, employed at the Onderstepoort Veterinary Research Laboratory, who against all warnings had been careless with the very virulent anthrax cultures grown in that laboratory. A huge sore developed on his lip and he arrived at the hospital in a septicæmic condition. A few injections of neosalvarsan saved even this patient.

As a result of this series of successful cases, a circular was sent to all district surgeons of the Union, in which their attention was called to the salvarsan treatment. This led to its more extensive use, with complete success. It is noteworthy that during these same years a few deaths from anthrax have been recorded in the Union, and that in these cases salvarsan was not tried.

Gegenbaur, V. (*Arch. f. Hyg.*, 1920, 89, 202), discusses the saprophytic growth of anthrax spores on animal hair.

He describes the results of a series of experiments in which sporing anthrax cultures were applied to the hair of animals either after removal or during life. He is of opinion that not only do the spores persist for considerable periods, but that multiplication

actually takes place. The growth is favoured by the heat and moisture of the animal's coat in addition to various nutritive substances excreted in the sebum and sweat. Apparently the growth is a local one, as the bacilli do not spread to parts other than those at which the spore emulsion was applied. The occurrence of anthrax in hair from animals apparently healthy may be explained from contact with infected hides or anthrax-infected animals.

Experiments on Anthrax Infection in Rats.

In the last decade of the last century, a great deal of labour was expended on the study of the action of anthrax bacilli on the highly immune rat, and many experiments were undertaken to investigate the methods by which the natural immunity could be broken down, and the animal rendered susceptible to anthrax.

A. FUKUDA (*Central bl. f. Bakterial (etc.)* Abt. I., 1920; orig. 84, 516) working in the Hygienic Institute in Zurich, has again made a study of this question, and especially the influence of calcium chloride, which was shown by Bullock and Cramer to increase the liability to tetanus and other anærobic bacteria. Instead of rendering rats more susceptible to anthrax, his experiments go to show that, in quantities of 0·001 to 0·03 gm., calcium chloride injected simultaneously with anthrax culture retards, as a rule, the course of the disease. He also finds that anthrax bacilli injected into rats already infected with nagana trypanosomes, has a delayed effect. There was also an apparent antagonism between *B. anthracis* and *B. pyocyaneus*—an old view revived. Starting with a culture which was only slightly pathogenic for the rat, the author, by means of twelve rat passages, raised the virulence so that one-third of a loopful of a culture on agar killed rats constantly in 27 to 54 hours. It was with such virulent cultures that the above experiments were carried out.

G. SANARELLI in *Ann. de l' Institut. Pasteur* 1925, 39, 209-97, deals with the pathogenesis of internal or spontaneous anthrax.

He denies the existence of this form of anthrax because the digestive juices of laboratory animals rapidly kills the bacillary forms, and large doses of spores given by the mouth are usually without effect in susceptible animals. In those animals which die from anthrax as the result of an intra-oral dose, an inconspicuous lesion of the mucous membrane of the upper alimentary tract is responsible for the infection, but it is not always possible to demonstrate it.

According to R. TURRO (*Compt. rend. Soc. de biol.* 1919, 82, 1,085) vaccination against the anthrax virus can be obtained by the use of non-specific substances.

White of egg, beaten with 0.5 per cent. solution of ammonia, bacteriolyses anthrax bacilli at 35° to 40° C. in two to three days. When animals are injected with the fluid they are said to become resistant to the first Pasteur vaccine, while controls die. The serum of immunised animals is said to show bacteriolytic properties against the anthrax bacillus.

The antigen of Bacillus anthracis.

WARDEN AND CONNELL, in the *Jl. of Infectious Diseases* 1919, 25, 399, deal with the antigen of Bacillus anthracis.

The paper is regarded as one of almost dramatic interest. From mass cultures of this organism they were able to get such large quantities of fat as to be able to make a tentative analysis. The fat contained caprylic acid, capric, oleic and palmitic acids. About half of the mixture was thought to be oleic acid. With trial mixtures it was ascertained that a mixture containing caprylic 10 per cent., capric 25 per cent., oleic 60 per cent., palmitic 5 per cent., gave immunity reaction most closely simulating the natural fatty acids from the bacteria. It was found, moreover, that the fatty acids, as mixed above, were able to prevent the growth of the bacilli from spores in quantities of 0·0006 mgm. in 10 c.c. of medium.

A more extraordinary phenomenon, however, follows:—

An attempt was made to use the fatty acid antigen to produce a protective serum in guinea pigs. Half a milligramme was injected daily for three days. These animals died of anthrax. The most complete controls were made.

The explanation of this most remarkable occurrence was that the hay on which these animals were fed contained anthrax spores. The animals passed through a negative phase, which allowed auto-infection to take place.

On the other hand, by suitably dosing protective amounts of the artificial antigen in rabbits, they were able to make them withstand ten times the lethal dose of the bacteria, but not a hundredfold dose. In no case was the protein of anthrax necessary for the mechanism of the immunity.

ENCEPHALOMYELITIS AND DISTEMPER. *Lancet*, 1926. I., p. 29.

Renewed attention has of late been directed to lesions of the central nervous system in connection with canine distemper. A meningo-encephalomyelitis was described in 1908 by Batten and Holmes in canine chorea, and subsequently a number of writers have confirmed and elaborated their description. Dexler had already drawn attention to changes in the brain less definitely associated with distemper. In 1923 and 1925 Kantorowicz and Lewy described the histological features of nervous distemper, and especially drew attention to the occurrence of groups of small bodies in the brain and cord, which they regarded as parasites and to which they attributed the morbid condition. These bodies are undoubtedly, from their descriptions, of the same nature as those which Craighead and Wright found in the brain of rabbits, and which have since been found in the brain and kidneys of rabbits and mice, and were called by Levaditis *Encephalitozoon cuniculi*, and regarded by him as a form of microsporidium and the cause of an encephalitis.

Manouelian and Viala found somewhat similar forms in the brain of man and animals dead of rabies,

and believed them to be the virus of that disease. The nature and pathological significance of these bodies is still under consideration. In the September number of the *Buffalo General Hospital Bulletin* Messrs. Benjamin Borman and Chauney M. Lapp record the finding of inflammatory changes similar to those found by Batten and others in the central nervous system of nineteen out of twenty-nine cases of distemper (twenty-seven dogs, one cat and one fox). In two or more of these nineteen cases the clinical states were merely catarrhal and nervous symptoms were absent. They suggest that a thorough search would reveal the typical lesions in the brain and cord in all cases of distemper. The changes which they described were very widely spread and patchy in distribution.

They consisted chiefly of a lymphocytic effusion sheathing the small vessels, and in some places surrounding the altered large motor nerve cells. The account given of the lesions in comparison with those of other forms of acute non-bacterial infective encephalomyelitis, *e.g.* encephalitis lethargica, herpetic encephalitis, poliomyelitis, Borna's disease and rabies, suggests that the histological changes in this group are very similar in kind, and are to be distinguished mainly by differences in their regional distribution and intensity.

The last mentioned authors regard the inflammatory changes as characteristic of distemper, and probably constant in the different forms (catarrhal, intestinal, and nervous) of this disease.

It may, however, be doubted whether, in the light of the recently-discovered widely-spread occurrence of similar lesions in several different kinds of animals, it is wise definitely to decide on the unity of a disease to which are attributed so great a variety of symptoms, until the experimental results of inoculating a purified or cultured distemper virus have been fully studied.

Milk and Diseases carried by Milk.

What is Milk?

J. F. Tocher has published a Memoir on "Variations in the Composition of Milk," based on the examination of 676 cows.

In 1899 the Board of Agriculture laid it down that genuine milk should contain 3 per cent. of butter fat and 8.5 per cent. of solids not fat. Dr. Tocher has found that the individual cow, with a supreme contempt for the Ministry of Agriculture and the Society of Public Analysts, varies its butter fat from 1.7 per cent. to 7.5 per cent., and its solids not fat from 6.9 per cent. to 10.6 per cent.

A few Milk-borne Diseases.

A milk-borne epidemic of Dysentery γ.

In the course of 24 hours, 150 children in an institution in Hamburg were seized with diarrhœa, vomiting, and fever; five cases ended fatally. Inquiry rendered it probable that the source of the trouble was milk, as it had been drunk only by those who were attacked. Within a day or two *Bacillus dysenteriæ γ* was isolated from the milk without difficulty, and also from many of the patients. The milk, which came from an unimpeachable source, had been delivered at the home the day before the outbreak, and had at once been boiled and placed in the larder near the kitchen. The same milk had been delivered to other institutions without ill effect. It was clear, therefore, that it must have been infected in the institution after sterilisation.

The author, F. Lorenz (*Ztschr. f. Hyg. u. Infektionskrank.*, 1920, 20, 423) believes and brings experiments to show that in all probability the destruction by sterilisation of the bacteria in the original milk rendered the latter an admirable medium for the growth of the dysentery bacilli, which gained access to the milk in large quantities from a dysentery carrier.

The interesting point in this investigation was that experiments on animals led to the belief that the γ strains isolated were not unusually infective or toxic.

J. P. Kinloch, in *J. Hyg.* 1923, 21, 451, describes the Aberdeen epidemic of milk-borne bacillary dysentery.

In March, 1919, an extensive epidemic, involving 978 cases of dysentery, occurred in Aberdeen, and was traced to one dairy. Seventy-two of the affected persons died. The dairy incriminated drew its supply of milk in part from a particular farm in which diarrhœal symptoms had made their appearance a few days before the outbreak, in Aberdeen. The farmer's wife and two children were suffering from diarrhœa at the time the epidemic appeared, and one of the milk maids was recovering from a similar condition. A sister of the farmer's wife was living at the farm at the time of the outbreak and had been there for two months subsequent to her return from nursing dysentery at Salonica. She was, however, unaware of ever having had symptoms of dysentery herself.

O'Kelly, W. D., in *J. Hyg.* 1922, 21, 113, reports on an outbreak of bacterial food poisoning.

A milk-borne epidemic of Gärtner injection which broke out in an institution in Dublin and affected 148 boys out of a total of 170. The source of the milk infection was not completely cleared up, but may have come from an employee in the institution, as he was suffering some days previously from gastro-enteritis, while his serum agglutinated Gärtner's bacillus.

Benson, R. L., and Sears, J. H., in the *Jl. Amer. Med. Assn.* 1923, 80, 1608-12, describe a milk-borne epidemic of septic sore throat in Portland, Oregon.

The epidemic affected 487 cases, which occurred almost exclusively among the customers of a single raw milk dairy. The probable source of the epidemic was a cow with a consolidation of the left front quarter of the udder, the milk from which, on standing, separated out differently from that of the other quarters, the lower half of the milk column consisting of yellowish creamy pus showing numerous pus cells and many streptococci. Cultures revealed ten million hæmolytic streptococci per c.cm. in the milk from this quarter, a few in the left rear quarter and none in the other quarters.

Similar strains of hæmolytic streptococci were obtained in almost pure culture from one milker's throat, and from the throats of numerous patients with septic tonsillitis and contacts.

The writers think it probable that the milker in question infected the udder of the cow, producing purulent mastitis, that on one or more occasions the cow was milked in with the herd, and that the massed infection resulted in an epidemic.

Of the 487 cases, 166 were severe, *i.e.* either had serious complications or gave trouble from prolonged sepsis, and 321 were moderate or mild cases. There were twenty-two deaths—a mortality of 4.5 per cent.

Three of the fatal cases were ill in hospital with some pre-existing complaint when the epidemic started, and several others were in senile persons. The chief complications, in order of frequency, were erysipelas, otitis media, arthritis, peritonitis, skin eruptions, myocarditis, laryngitis, sinus infection, appendicitis, encephalitis, nephritis and endocarditis.

The source of Agglutinins in the Milk of Cows.

Theobald Smith, M. L. Orcutt and R. B. Little, in the *J. Exper. Med.*, 1923, 37, 153, describe experiments in which *Bacillus abortus* was injected into one or other quarters of the udders of cows.

The bacilli were introduced in the living as well as in the dead state, and the agglutinin titre of the milk and blood was then determined.

The authors believe that the udder participates in the formation of agglutinin, the injected quarter first reacting with a heavy influx of polynuclear leucocytes.

Milk sometimes varies its colour depending on the plant pigments eaten by the animal producing the milk. It is interesting to note that these pigments may produce abnormal conditions in man.

Under the name of "Carotinæmia," Hess and Myers, in the *Jl. of the American Medical Assn.*, 1919, 73, 1743-5, describe a new clinical picture which became apparent during some feeding experiments on children.

It was noticed that two children developed a yellowish colour, similar to that of jaundice. It affected the whole body, and was most intense on the palms of the hands, where also desquamation was apparent. These two infants were taking two tablespoonsful of fresh carrots daily, and had been on this diet for some weeks.

On changing the diet, the colour slowly disappeared. Two other infants on a similar diet also developed a yellow colour, but to a less extent. It was evident that the element of personal idiosyncrasy could not be left out of count. Aspirated blood showed the presence of carotin. The paper concludes with a valuable survey of work on animals dealing with allied pigmentations.

What is the Relation of the Carotin Pigment to Vitamins?

L. S. Palmer and C. Kennedy deal with this in a paper in the *Jl. of Biological Chem.*, 1921, 46, 559.

They review the available *data* in the literature as to the suggested identity between the fat-soluble vitamin and the carotinoid pigment of the plant.

The conclusion reached is that there is no strong evidence for an identity of the two substances, and add the results of some fresh experiments, all of which lead to the conclusion that the vitamin and the carotinoid pigments are not identical:—

First, no trace of carotinoid pigment could be found in a thorough examination of the tissues of albino rats.

Secondly, a ration of ewe's milk, giving good results for growth and reproduction with rats, contained only 0·000013 per cent. of carotin.

Thirdly, carotinoid-free egg yolk was used with success in a diet as the sole source of fat-soluble vitamin.

In addition, a comparison between the value of various substances as sources of fat-soluble vitamin and their content of carotin showed the widest divergence in the distribution of the two substances. It appears, therefore, that carotin and the fat-soluble vitamin are two different substances.

The Bactericidal Property of Milk.

F. S. Hanssen in the *Brit. J. Exper. Path.*, 1924, 5, 271, discusses the bactericidal property of milk.

Fresh milk is found to possess bactericidal properties when tested with *B. typhosus* and *B. paratyphosus* β. This effect is demonstrable during the first 1-4 hours at 37 degrees C. The decrease of bacteria is evidently only temporary, and not traceable after twenty-four hours.

Kept at the temperature of the room, a similar decrease of the bacteria takes place, starting later but being of a longer duration.

The bactericidal properties of milk have been found to vary greatly in milk samples from the same cow at different seasons of the year. These bactericidal properties are further found in milk heated to 63 degrees C. for thirty minutes, and in milk heated to 70 degrees C. for fifteen minutes.

This shows the fundamental difference between these bactericidal properties of the milk and the alexines of the serum, which are much less heat-resistant.

After heating to 75 degrees C. for fifteen minutes the bactericidal properties of the milk were lost.

The theory is proposed that the bactericidal properties of milk are in close relation to the oxidising enzymes of the milk.

It is probable that the variations in the bactericidal power found at different seasons of the year depend upon variations in the food of the cow, influencing the content of oxidising enzymes in the millk.

The Digestibility of Fresh and Sour Cow's Milk.

Orla-Jensen and B. Spur, in *Ugeskr. f. Læger.*, 1926, 86, 655, deal with this question and come to the conclusion that sour milk is more readily digested than fresh milk.

Cow's milk has been the subject of serious criticism on the ground of the infections it carries, but it is interesting to note that some workers in the bacteriology of human milk find that, probably depending on

the individual, that food is not always free from infective agents.

L. S. DUDGEON and R. C. JEWESBURY report their findings in the *J. Hyg.*, 1924, 23, 64-75. They examined the milk from 100 women during the puerperium or at different stages of lactation. In the milk from mastitis the commonest microbe found was *Staphylococcus aureus*.

From 49 per cent. of human milks, streptococci were isolated, but there was no evidence that this was associated with any pathological process in the breast, although the number of streptococci in milks with a high incidence of polynuclear leucocytes was greater than in normal milk.

Only 2 per cent. of streptococci in milk was hæmolytic.

In ten instances *B. coli* were recovered from human milk.

From milk we pass on to

Milk Fever in Cows.

LITTLE and WRIGHT (*Brit. Journ. Exp. Path.*, 1925' Vol. VI.) have recently shown that the blood calcium is definitely subnormal in this disease.

In mild cases they found a drop of from 20-30 per cent. at the onset of the disease, and in severe cases the drop was as much as 60 per cent.

DRYERRE and GREIG (*Lancet*, 1925, Vol. I., 1144) suggested that milk fever is due to a relative deficiency in the parathyroids which gives rise to guanidine intoxication.

A lowered blood calcium does not necessarily imply a parathyroid deficiency, but the suggestion has been made that the correlation of the two conditions is sufficiently marked to warrant research along the lines of the suggested endocrine disturbance.

How to correlate these observations with the present methods of treatment is a fascinating problem.

Mr. President and Gentlemen : I trust the variegated paper I have submitted in response to your request will supply material for a discussion which will be of some value in the production of that interchange of ideas, observations and deductions which is the requirement of a paper if it is to command your approbation. If that result ensues, I shall feel that my effort is satisfactory to you.

DISCUSSION.

Mr. CORMACK, opening the discussion, referred first to the question of the transmissibility of diphtheria from cats to human beings, an old topic which recurred periodically. He had examined hundreds of cats with different forms of throat trouble, but he had never yet met with a case which could be compared with diphtheria as found in the human subject ; yet, in view of the observations of men in a position to study the question, one could not entirely dismiss such a possibility. Therefore, wherever there was a case of a cat suffering from a sore throat, it would be as well to have it isolated, if not actually destroyed. The infection of a human being with swine erysipelas was new to him, and he had never even suspected such a possibility. It was certainly interesting to know that there had been such cases, attended with the same serious heart lesions to be found in affected pigs, and it was equally satisfactory to know that something in the nature of a serum was obtainable.

Mr. H. W. DAWES said he had no remarks to make by way of enlightenment, but, knowing Dr. Graves personally, he would like to express his great appreciation of the vast amount of research work that had been necessary in the preparation of the address to which they had just listened. Dr. Graves had put forward one or two remarkable statements, and the first to be noted was on the subject of rabies. The suggestion of a possible hereditary predisposition to rabies had come as a surprise to most of his listeners, whilst another somewhat disturbing statement was that rabies might exist without possessing any of the so-called characteristic symptoms. As to the association of diphtheria with the cat, there would always be a difference of opinion between the medical and the veterinary professions with regard to certain diseases in animals and human beings. There were many conditions in the cat in which symptoms of a diphtheritic character were present. Personally, he had an open mind, but if one examined a sufficient number of cats, it was surprising how often one found organisms morphologically similar to the diphtheria bacillus in preparation from the throat. He feared the harmless cat was sometimes made the scapegoat of a medical diagnosis. With regard to anthrax in the human being, the salvarsan treatment outlined by Dr. Graves was of very great interest. Mr. Dawes mentioned the case of a butcher whom he knew who contracted the disease. About the same time there were two farm cases in the district, although there had not been an outbreak there for over forty years. There was no evidence that the butcher was connected with the farm cases in the slightest degree. The butcher went home from work feeling unwell, was seen by a doctor, and died in hospital thirty-six hours later. At no time were any external lesions to be found, and it appeared to be a septicæmic form of anthrax. It was necessary to tell the jury, at the inquest, that no connection could be traced between this man's death and the two animal cases in the district. An investigation, supported by the Ministry of Health, was carried out, but there was no evidence that the butcher had handled an infected carcase. A suggestion was made as to the possibility that contagion might have been due to the handling of wrappers containing imported meat. It was a remote possibility. He was sure Dr. Graves would not be able to resist a reference to milk fever, and he was very glad he had not. The calcium deficiency theory was a strong point with Dr. Graves, and the only observation he (Mr. Dawes) had to offer was this, that he was beginning to wonder whether their conception of milk fever as a disease was not somewhat too narrow. Most of them could recall cases of milk fever remote from parturition, which was an aspect of the matter that was sometimes overlooked, so that calcium deficiency would not explain everything. He would have liked Dr. Graves to have said something with regard to the transmission of foot-and-mouth disease to human beings.

Mr. W. TRIGGER said he had attended the meeting on purpose to hear Dr. Graves, and he had certainly not been disappointed.

Mr. H. TUDOR HUGHES, referring to the possible spread of contagious abortion to the human being, said he thought the question had been settled years ago. Moses, the greatest of all medical officers of health, would have laid down an isolation period and an ablutionary period if this disease had been communicable to mankind. They must remember that after vaccination there was a residuum left in the cow's udder, and they would soon be up against the medical profession if, in the treatment for immunity, they ran any risk of infecting the human race. The question of cutaneous anthrax suggested cutaneous tuberculosis, and to which the veterinary profession was exposed. He knew a young veterinary surgeon who became infected in the course of meat inspection, and while the lesion was discharging on his hand he seemed to be all right in his general health. When the wound healed, the glands in his axilla swelled, and they had to be removed before he was on the way to recovery. He also mentioned the case of a butcher who went about slaughtering, and who was infected in a similar manner. He had a lesion which healed very slowly and was on his hand for two years. These were examples by which veterinary surgeons should take warning, for it was apparently easy to contract tuberculosis by this implantation method. With regard to Dr. Graves's statement that 49 per cent. of streptococci was to be found in human milk, it raised the question of udder disease, which was so frequently met with in every-day practice. If one quarter of the udder was affected he thought the milk from the other three quarters should be discarded, although he was afraid in many cases that was not done. They were in a transition stage now with regard to udder disease, and so keen were farmers in the matter of milk production that the cow itself was looked upon as a mere appendage of the udder.

Professor BUXTON, referring to communicability of swine erysipelas to man, said they were intensely interested at Cambridge in the preparation of a serum, and he was pleased to say the result had been successful. With regard to the *Bacillus abortus*, he would express no positive opinion one way or the other as to its power to affect the human subject, but there were cases on record in which it would appear that the *Bacillus abortus* must have been responsible for symptoms of Malta fever in the human subject. With regard to diphtheria and cats, one ought to remember the difference between a carrier of infection and an animal actually infected. Some years ago, when he was examining horses, he always examined the blood of a normal horse for the presence of normal anti-toxin, but when he came to examine other animals he had the utmost difficulty in finding normal anti-toxin present. In the cat, he never found it, and so the cat might act as a mere carrier of diphtheria.

Mr. POWLEY said he was struck with the statement as to rabies, but our quarantine period of six months ought to prove a check, as very few, if any, rabid animals were now imported into this country. As to whether contagious abortion in cattle could be transmitted to the human subject, he thought medical men would have a much busier time with their lady patients than was the case to-day. He was interested in the salvarsan treatment of anthrax, because in his district there were several anthrax-infected farms and there was a great difficulty in making them pay.

Mr. BROOKE said the question of the transmissibility of diphtheria from cats often arose in the course of his own practice, because he had a fair number of the smaller animals with which to deal. He had met people who were sure of it, but personally he had never found in any *post-mortem* anything that corresponded with the diphtheric lesion. However, after what he had heard that day, he would have to modify his opinion, and it caused him a certain amount of disquietude.

Dr. GRAVES, replying to the discussion, first thanked the company for the patient hearing he had received, and he was glad to think his remarks had caused a certain amount of interest. Mr. Howard Dawes asked if he could give any better explanation of the infection of the butcher who died from anthrax. No, he could not. The interesting point was whether the man handled the wrapping material that came from abroad. He had purposely omitted foot-and-mouth disease from his paper. As to the danger of the *Bacillus abortus*, it might produce other evils, besides abortion. A man might get it: he would not abort, but he might develop symptoms of the character of, say, Malta fever. As to whether streptococci in cow's milk would produce illness in the human drinker, the essential point was the latter's power of resistance, but there was, no doubt, considerable danger. He agreed that too much importance was attached to the udder alone; the cow as well as the udder must be clean and healthy. The other observations which had fallen from the different speakers were very interesting, but he thought they called for no special reply.

Army Veterinary Service.

MOVES OF OFFICERS.

Lieutenants J. F. L. Taylor and P. C. W. Creagh proceeded to Aldershot on the 2nd March, in continuation of their probationary training.

Lieutenants F. W. Goodall, J. S. Kingston and A. P. MacDonald proceeded to Woolwich on the 2nd March, in continuation of their probationary training.

Brevet-Lieutenant Colonel C. E. Steel arrived home from India on the 20th March. He is at present on leave pending posting to Edinburgh for duty.

Captains A. G. Lalor and G. F. Watkins arrived home from India on the 20th March. They are at present on leave pending posting to the Eastern Command for duty.

Major A. Hodgins, D.S.O., arrived home from India on the 1st April. He is at present on leave pending posting to the Eastern Command for duty.

Major W. C. Lowe, F.R.C.V.S., arrived from Egypt on the 30th March and reverted to the Home establishment with effect from the 1st April. He is at present on leave pending posting to the Southern Command for duty.

Major W. Ludgate, D.S.O., arrived home from India on the 1st April, on leave pending retirement.

* * * * *

The Annual Dinner of the Officers of the Royal Army Veterinary Corps will be held at the Hotel Cecil on Friday, the 18th June, 1926, at 8 p.m. Officers of the Militia, Territorial Army and Temporary Officers who served in the Great War are eligible to attend.

Subscription: Subscribers, 15s.; non-subscribers, £1 10s. Gentlemen desirous of attending should inform the Honorary Secretary, R.A.V.C. Dinner, Army Veterinary Department, War Office, Whitehall, S.W. 1.

The Veterinary Record.
24th April, 1926.

SOME PROBLEMS OF COMPARATIVE MEDICINE.

The diseases affecting man and animals have again been under review, and the attention of our readers may be particularly directed to the important paper by Dr. T. C. Graves recently presented at the Annual Meeting of the Midland Counties Division. Therein will be found some recent observations of particularly striking interest. Amongst the most important of these may be mentioned the recent researches into the hereditary transmission of rabies, which, on reflection, will be found to furnish added weight to the value of the quarantine regulations of the Ministry of Agriculture, also to the muzzling restrictions imposed as occasion may demand.

The cat once more comes up for judgment in its relation to human infection, but in the balance the evidence would appear to favour and exculpate the cat, though the possibility of its acting as a carrier of some human infections rather than being a sufferer from them seems the more important.

The reference to glanders, containing the suggestion that " the causative organism of glanders is not always one and the same bacillus, and that a group of organisms has been classed under the designation of *B. mallei*," may come as something in the nature of a shock to those who have applied the mallein test on a large scale. As a matter of practical politics and animal economics, the work of stamping out glanders in this country on the basis of the mallein test, initiated and undertaken by the late William Hunting, and used on an unprecedently large scale during and after the War, seems to have allowed none to pass undetected, as far as may be judged by the returns of the Diseases of Animals Act, which show that cases have now been " reduced practically to vanishing point as the result of the continuous campaign against the disease." The latest Annual Report of the Ministry of Agriculture, however, points out that expert laboratory investigation has failed to confirm the findings of the mallein test in life in some of the recent cases reported, and the result of the investigation in progress to account for this will be awaited with interest in view of the observations contained in Dr. Graves' paper. Those engaged in meat inspection will have brought to their notice one of those rare cases of paratyphoid in man being caused by mutton, which was duly inspected and passed, though the sheep were subsequently demonstrated to have suffered actually from the same disease. The observations upon anthrax are extensive and instructive and furnish an unexpected result, *viz.* that the normal serum of the animal, *i.e.* the bovine, which furnishes an overwhelming majority of the cases, and deaths, in the official returns, should be proved to be possessed of passively immunising value. It certainly goes to support the view we have heard expressed that " more cattle suffer from anthrax than die of it," the preponderance of their deaths being readily accounted for by the fact that they are by far the largest consumers of imported feeding stuffs. The advances that are being made in bio-chemistry are amply illustrated by the production of anti-anthrax immune substances as the result of the injection of a mixture of fatty acids as an artificial antigen, without using the actual bacillus. With reference to milk and diseases carried by milk, one is particularly struck by the remarks relating to streptococci. What is their significance ? Streptococci were isolated from 49 per cent. of human milks, *but there was no evidence that this was associated with any pathological process in the breast.*

Would it be reasonable to infer from this that the presence of streptococci in the milk of the cow is a matter of as little importance ?

Metropolitan Cattle Market.

The annual report of Mr. J. R. Hayhurst, the clerk and superintendent of the Metropolitan Cattle Market at Islington, states that 111,591 animals were sent there last year. In 1924 the number was 84,470. The demand for lairage accommodation was not as great as in 1924. The total number of animals slaughtered at the public abattoirs was 166,344, as against 186,252 the year before. The number of sheep killed had decreased by 12,841 and pigs by 15,662, but of calves there was an increase of 4,153, and of oxen 4,198. The receipts amounted to £42,736. The business of the market was again indirectly affected by outbreaks elsewhere of foot-and-mouth disease, but there was no outbreak at the market itself. The Pedlars' Market had a successful year. The total receipts by the Corporation in respect of it were £13,199. There was a greater number of horses slaughtered at the abattoir than in any previous year. All the horseflesh was exported to the Continent, after being certified as free from disease and fit for human consumption.

CLINICAL REPORT.

Fatal Gastro-Enteritis of Sheep due to the Ingestion of Sand.

By Allan Leslie, M.R.C.V.S., Newmachar.

Subjects.—Hoggs, rising one-year-old, in thriving condition.

Anamnesis.—Several animals were scouring badly, six had died, three on the same day. The sheep were on this particular field about two months.

Dietary.—During the greater part of the day the hoggs were kept on turnips in wet enclosures. These turnips were of the "Champion" variety, of excellent quality and approximating swedes in consistence. A short time daily on a heather hill was also permitted, while an ample supply of hay and straw lay at hand.

Geology.—The soil is of a light, sandy nature, gneissose in origin. The field had not been cultivated for some years, and this was the first crop of turnips. As a result of the nature of the soil, the bulbs were well sunk in the drills.

Climatography.—During the early part of the feeding season the weather was wet and stormy, the land being then in a sodden condition. A cold spell followed and was succeeded by high, drying winds which at times reached the intensity of a gale.

Etiology.—Generous quantities of turnips were allowed, the supply being greater than the demand in the districts. In the crowns of the bulbs a considerable amount of sand became lodged and was ingested by the animals. Two hoggs died in a few days, while several other manifested symptoms of acute intestinal irritation characterised by pronounced diarrhœa. This latter symptom was the only indication of the condition being widespread in the flock. Fatal terminations resulted within a few hours in most cases, less in others.

Semiology.—A variable period elapsed between the ingestion of the foreign material and the first manifestations of alimentary disturbance. The first fatal case died within six days, but the others lingered on, and, apart from the intestinal irritation, seemed to enjoy perfect health, inasmuch as they ate well and showed no inclination to isolate themselves as ailing sheep so frequently do. The fatal symptoms, as described by the experienced shepherd, were those of inflammation, characterised by the profuse diarrhœa, marked cerebral excitement, tossing the head from side to side, staggering gait, blindness, madness, collapse and death within a short period. It should be noted that those symptoms seized the animals suddenly, and, notwithstanding the watchfulness of the shepherd, a few were found dead.

Course.—This varied considerably with the amount of sand ingested. Little harm appeared to result in most cases until the foreign material reached the intestinal canal. Several cases, however, showed a persistent diarrhœa, which lasted some days, clearing up when the animals were allowed a limited supply of fresh grass and clean turnips. It is difficult to estimate from those affected the rate at which the sand proceeded from the "stomachs" into the intestines, but it is evident that the more bulky the ration the less liable were fatal symptoms to appear.

Diagnosis.—This was not attempted because of the difficulty of seeing the animals just before death.

Treatment.—The sheep were removed to a grass field and there given hay, straw and clean turnips. This method, however, was not wholly successful, for one or two died after removal.

Necropsy.—External examination was negative. Internally, the site of the condition was the alimentary tract. The sand was not localised in any particular part of the intestines. The degree of inflammatory change in the intestinal wall was modified by the amount of sand present—which varied up to a cupful—and the amount of fibrous ingesta. Evidence of incipient gastro-intestinal inflammation was encountered in carcases in which the ingested foreign material was diffusely spread. It may be mentioned that the condition of the affected animals added nothing to the gravity of the case.

Examination of the Fæces.—This was made in the part of the field in which the hoggs were enclosed during the night. The material examined showed a wide range of consistence, as would appear from the number showing symptoms—sixty to seventy variable quantities of sand were found in the samples examined microscopically, but it should be noted that not infrequently quantities of sand and gritty material are found in the fæces of normal healthy sheep. In many cases the excrement was green in colour and watery, and contained shreds of the intestinal mucosa as well as blood-tinged, undigested food matter. Fæces which approximated the normal both in colour and in consistence showed, on closer examination, small particles of blood-stained mucosa surrounding the stools, while palpation revealed the presence of sand.

Conclusions.—(1) The condition is frequent in sheep at this time of the year. Apart from examination of the fæces, actual diagnostic signs are wanting.

(2) When sheep are allowed an unlimited supply of turnips, they have not the same inclination to eat straw or hay, even although the latter be at hand. The excessive quantity of roots engorges the rumen, giving the animals *apparent* bulk for the time being.

Causes.—(1) Irrational feeding. Diet with excess of water, *viz.* roots. (2) Deficiency in ration, *viz.* deficiency of fibre. (3) Attempts at too rapid fattening of the hoggs.

Personal.

Major G. W. Dunkin continues to make progress, following his operation for appendicitis, and is now permitted to see friends at Hendon Cottage Hospital.

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Mr. Norman Dobson, B.Sc., M.R.C.V.S., Royal (Dick) Veterinary College, Centenary Fellow, has left Edinburgh for Paris, where he will continue his work under the Fellowship at the Pasteur Institute.

ABSTRACT.

So-called Salmon Poisoning in Dogs (Progress Report).

C. R. Bonham, B. T. Simms and F. W. Miller. *Jour. Amer. Vet. Med. Assoc.*, Vol. 21, No. 6.

Scientists and stockmen in the Pacific North-West have long been puzzled as to why salmon should cause serious symptoms and death in dogs that have eaten it.

Enquiry of veterinary surgeons elicited conflicting reports and some denied the existence of the disease, but it is undoubted that in Western Oregon, North-western California and South-western Washington many dogs die after having eaten salmon or trout. The trouble apparently does not occur in British Columbia or Alaska, although salmon and trout are plentiful in these districts.

The authors have found the cause of so-called salmon poisoning in dogs to be a small intestinal fluke, the mature form of which occurs in the intestine of affected animals. Dr. Maurice C. Hall, of the Zoological Division of the Bureau of Animal Industry, reports that he is reasonably sure that this is a fluke which has hitherto not been identified. It is a distomum, 500 μ. in length and oval in outline, and is hermaphrodite. A cystic form occurs in the muscles, kidney, liver and gills of fish. By feeding fish to dogs and then destroying them at intervals, the authors have definitely demonstrated that this cyst developed into the mature parasite that affects the dog.

The cysts have been found in salmon and trout. Salmon are hatched in the fresh water of the mountain streams and after one year they migrate to the ocean and live in salt water three or four years and finally return to the mountain streams for the purpose of spawning, after which they die. Cysts are present in salmon before they leave fresh water and after they return to it. They have not been found in ocean-caught salmon, and susceptible dogs were not affected by eating these fish. It was estimated that about one million cysts were present in one pound of severely parasitized muscle of a "soreback" salmon. Cooking or prolonged freezing destroys the parasite.

The symptoms do not develop until seven to ten days after the dog has eaten the fish. The onset is very sudden and is marked by a temperature of 105-107° F., succeeded by depression, inappetance, thirst and sometimes a purulent discharge from the eyes. Oedematous swelling may appear on the face, and this is probably the most valuable diagnostic symptom. Diarrhœa develops after 48 hours—at first blood-tinged and finally all blood. The bloody discharge contains the fluke eggs in great numbers. Death occurs in from 8 to 10 days, but occasionally a dog recovers. On *post-mortem* the mature flukes and fluke eggs are found in the intestine. There is a marked hæmorrhagic inflammation extending from the pylorus of the stomach to the anus. Microscopically, it can be seen that the mature fluke burrows into the mucous membrane of the duodenum, and all sections showed necrosis along the surface of the mucosa.

A definite and apparently permanent immunity is present in dogs that recover. One dog that recovered did not become sick after eating parasitized fish. Nine other immune dogs were under observation, six of which had been affected and recovered. In addition, numbers of dogs inhabiting the coast country eat fish regularly, and the owners state that these dogs had the disease and recovered. Attempts to produce and transmit this immunity have been negative. The authors offer no explanation as to the origin of this immunity. W. L. S.

R.A.V.C. Point to Point.

The Annual Race for the R.A.V.C. Point to Point Challenge Cup was run in connection with the Hambledon Point to Point Steeplechases at Liss, on Saturday, 17th instant, over a very sporting 3½ mile course which was practically all grass.

Major-General H. T. Sawyer, C.B., D.S.O., Director-General, A.V.S., together with a large number of Officers of the R.A.V.C. and their wives and families were present, while most of the R.A.V.C. N.C.O.'s and men from the Aldershot Command were brought by char-a-banc and enjoyed a good afternoon's sport in spite of inclement weather.

This year is the first time that the race has been held and it is hoped that in future it will become a popular annual event.

From eleven entries, eight started, and the result was:—

1st.—Lieut.-Col. J. J. Aitken's Sweet Violets (Owner).

2nd.—Major C. H. S. Townsend's Ruddylion (Owner).

3rd.—Major R. A. Gooderidge's Mrs. B. (Lieut. A. P. MacDonald).

Also ran.—Major S. L. Slocock's Big Ben (Lieut. J. J. Kane) fell; Major C. H. S. Townsend's Baroness (Lieut. P. C. W. Creagh); Major E. G. Turner's Blacknight (Owner); Major R. A. Gooderidge's Knobzon (Owner) fell; Major J. J. Plunkett's Robin (Owner.)

Big Ben came down at the first fence and his rider (Lieut. Kane) broke his collar bone, while Major R. A. Gooderidge, when leading, fell two fences from home, fracturing his wrist, but fortunately the injuries of neither of these officers are likely to be serious.

Lieut.-Colonel Aitken's win was very popular, especially as he has only recently recovered from a rather serious hunting accident.

R.C.V.S. Obituary.

Bishop, George Henry, Scotland House, Brislington, Bristol. Graduated, London, 15th May, 1890. Died, 14th April, 1926.

National Veterinary Medical Association.

Quarterly Meeting of Council.

A quarterly meeting of Council of the National Veterinary Medical Association of Great Britain and Ireland was held at 10 Red Lion Square, W.C., on Wednesday, April 7th, 1926.

The President, Professor J. B. Buxton, occupied the Chair, and there were also present Dr. O. Charnock Bradley, Lt.-Colonel J. W. Brittlebank, Messrs. J. H. Carter, J. Clarkson, J. C. Coleman, Professor J. F. Craig, Messrs. H. J. Dawes (Hon. Secretary), A. Gofton, O. V. Gunning, R. Hughes, H. Kirk, C. O. Langley (Solicitor), J. F. Macdonald, J. McKinna, Major-General Sir John Moore, Messrs. W. D. Rees, J. R. Rider, H. L. Roberts, J. Willett, Professor G. H. Wooldridge and Lt.-Colonel T. D. Young, together with the General Secretary, Mr. F. Knight; also, by invitation of the Council, Messrs. H. R. Allen, T. J. Bosworth and Major P. J. Simpson.

The minutes of the last quarterly meeting of Council, having been published in the *Veterinary Record*, were taken as read, and were confirmed and signed.

Correspondence.

(1) Apologies for absence were announced from Messrs. W. F. Aston, Hugh Begg, D. Brown, Major R. Catmur, Captain C. W. Cartwright, Major W. J. B. DeVine, Major G. W. Dunkin, Messrs. F. L. Gooch, H. P. Hogben, J. Ewing Johnston, J. S. Lloyd, G. P. Male, C. Masson, R. B. Nelder, Major H. Peele, and Captain A. W. Noel-Pillers.

(2) From Professor B. Gofton, as follows:—

Royal Veterinary College,
London, N.W.1,
29*th January*, 1926.

The Secretary,
National Veterinary Medical Association.

Dear Sir,—I am writing as treasurer of the medical association of the above institution. Last year we became affiliated to the "National" and paid a subscription of two guineas. For this the only privilege we get is that Class D men are supplied with the *Record* for a guinea a year. As a matter of fact, I do not think any of our final year students take advantage of this, as the reading room is supplied with at least one *Record*.

It seems strange to me that we never receive communications of any kind from your office, so that to all intents and purposes we are not part and parcel of the "National." Also, of course, we have no voice in the management of the N.V.M.A., as our students are unqualified.

With regard to this matter, I have one or two suggestions to make. First, let me tell you that from the beginning I was not in favour of the affiliation, because I felt, and still feel, that the "National" is for qualified men only. My first suggestion is that the Council of your Association look into the matter thoroughly and ascertain if the affiliation is according to law. Secondly, if this is so, let my association have some say in the management of the "National." Thirdly, we seem to be entitled to one copy per week of the *Record* for our subscription of two guineas, apart from any copies supplied to the College.

Another suggestion I would make is that all students of this College, *i.e.*, all student members of my association, be allowed the *Record* every week for the sum of one guinea. A final year student is no more qualified than one in the first year, and it is never too early to encourage an interest in the "National."

We paid our subscription last year in May, and, as the matter of this year's will come up before my Council shortly, I should like, then, to be able to state our exact position, and I hope that at the same time I may be able to announce greater privileges.—Yours truly, Bernard Gorton.

The President: It is evident that there is a misunderstanding here and I will ask the Solicitor to speak to the points raised.

Mr. Langley: The whole position as regards student organisations which are affiliated to the "National" is laid down in Article 27 of the Articles of Association, which says: "Students at veterinary colleges of the United Kingdom may associate themselves together and so form a cadet branch affiliated to the Association, on payment of an affiliation fee of two guineas for each branch formed, and subject to the approval of the Council or any standing or sub-committee appointed for that purpose. All members of such cadet branches who shall have commenced their final year of study at any such college as aforesaid, shall be entitled to receive the "Veterinary Record" or other official publication of the Association on the payment in advance of a subscription of one guinea, and shall also be entitled to attend the Annual Meeting of the Association, but not to vote at the same nor be eligible for or entitled to representation upon the Council of the Association."

Professor Gorton raises three questions. First, as to whether affiliation is legal. I do not know precisely what he means by that, but if the cadet branch has been affiliated and approved by the Council in accordance with the Articles it is perfectly legal. In regard to his second point, Article 27 lays it down that affiliated cadet branches shall not have any control in the management of the Association and, thirdly, there is nothing at all in the Articles which says that members of cadet branches shall be entitled to a copy of the *Record*, other than students in their final year, who pay a reduced subscription of £1 1s. 0d.

The Council instructed the Secretary to reply on these lines to Professor Gorton.

(3) From Captain Hamilton Kirk, stating: "At the next meeting of Council I would like, if possible, to move the following resolution:—'That this Council consider the desirability of holding more than one general meeting per annum.'"

The President: This is really a notice of motion and is quite in order. The question is whether we shall discuss the terms of this resolution now, or whether you wish to postpone its consideration.

Mr. Roberts: If I might suggest it, I think it would be well if this resolution came before the Annual

General Meeting, in order that the general body of members attendant there could discuss it.

The PRESIDENT: On the other hand, of course, it is a matter which might quite well be referred to the Organising Committee.

Professor WOOLDRIDGE expressed the view that the matter should be discussed at that meeting, as it was already under discussion by the Divisions.

Dr. BRADLEY, who remarked that he had a certain amount of feeling on that subject as he was most anxious that the Branches should function, warned the Council that, in his opinion, if the policy of holding more than one general meeting per annum were adopted the Council's expressed hope, that the Branches should function in a proper manner, would never be realised. He moved "that, in the opinion of this Council, the time is not yet ripe for the initiating of more than one general meeting per annum."

Mr. MCKINNA seconded the proposition, which was carried.

(4) From the Hon. Secretary of the Eastern Counties Division enquiring on behalf of his Division, if gentlemen whose names appear in Register iii. (list of Existing Practitioners registered under the Act of 1881) are eligible to become members of a Division of the "National."

The PRESIDENT: I will ask the Solicitor to reply.

Mr. LANGLEY: The whole question hangs on what is meant by the term "existing practitioner," and the meaning, as laid down in the Veterinary Surgeons Act of 1881, is that the practitioners concerned are not on the Register of Veterinary Surgeons. Article 10 of the Articles of Association says that "The subscribers to the Memorandum of Association of the Association and such other persons as shall be admitted to membership in accordance with these Articles, and none others, shall be members of the Association and be entered in the register of members as such," and Article 11 states: "Any member of the Royal College of Veterinary Surgeons or holder of the Veterinary Certificate of the Highland and Agricultural Society shall be eligible as a member of the Association."

As existing practitioners, as such, are not on the Register of the Royal College of Veterinary Surgeons they are not eligible for membership of the Association.

The PRESIDENT: They are on Register iii. of the book.

Mr. LANGLEY: The only gentlemen eligible who are not members of your Association are members of the R.C.V.S.—that rules out the registered practitioners.

Proceeding, Mr. Langley said: It is stated in Article 28 that "subject to the rules herein contained, each division and branch and cadet branch shall be free to govern itself in such manner as it shall think fit, and for that purpose to make from time to time such rules as it may think fit, and to repeal and alter the same as and when it shall be deemed expedient," so that, if a Division wishes to make a rule admitting an existing practitioner to membership it can do so, but it would be a matter for a special resolution by the Division.

Mr. ROBERTS: I was not present at the Norwich meeting of the Eastern Counties Division from which this enquiry emanated, but I attended the Ipswich meeting of the Division when the name of a respected existing practitioner was submitted for nomination. It was pointed out at that meeting that a rule of the Eastern Counties Division was that members of the Division must be in possession of a diploma. I was not aware that existing practitioners were accorded diplomas when they subscribed to the Act of 1881, therefore, in the circumstances, although it is quite a domestic matter for the Division concerned, I think it might be pointed out that we understand that the rules of the Division prevent gentlemen who do not possess a diploma from becoming members. For the present I will say no more—the question of inviting existing practitioners to divisional meetings of the "National" may crop up under another heading later on during this Council meeting.

It was agreed that a reply be sent that while, by the rules of the Association, existing practitioners could not be accepted as members of the parent body, the question raised in the communication from the Division was a domestic one and covered by divisional rules, also that no objection whatever would be taken by the Association to Divisions making a rule which allows them to accept an existing practitioner as a member.

(5) From Dr. F. Gerlach, of Mödling, Austria, in reply to a communication from the Association, in the course of which he stated:—

"I welcome heartily every endeavour that appears to be devoted to build up a closer relationship between English and Austrian veterinary science, and place myself willingly in the service of such an ideal.

"In the first place, I confidently hope to enter into relations with Professor Gaiger in the matter of anærobes for the purpose of comparing notes.

"In return for your sending me the *Veterinary Record*, I take the liberty of sending you a number of our journals *Seuchenbekampfung*, and will arrange to send you each number of the journal as it appears. At the same time, I am communicating with Professor Dr. L. K. Böhm, of the Veterinary High School in Vienna, about the exchange of the *Wiener Tierarztliche Monatsschrift*, of which he is the Editor, for your journal.

"For your kind offer that I should translate original articles and to publish them in your journal, I am especially grateful, and hope soon to take advantage of it.

"I am sincerely of the opinion that this will be the first step towards a friendly and close co-operation between English and Austrian veterinary surgeons, which will be to us certainly extremely welcome."

(6) From the Librarian of the Royal College of Veterinary Surgeons, thanking the Association for the gift of copies of the *Veterinary Record* for the year 1925.

(7) From the Secretary of the Royal Sanitary Institute Congress, thanking the Association for its decision to send delegates to the Congress of the

institute to be held in London from July 5th to the 10th, and requesting to be supplied with the names of the Association's representatives.

The SECRETARY: This matter was brought before the Council at its last meeting, when it was decided to postpone to this meeting the appointment of delegates.

It was agreed that the Association be represented by the President, the Hon. Secretary and Mr. McKinna and that their out-of-pocket expenses be paid.

(8) From the Hon. Secretary of the Royal Institute of Public Health, inviting the Association to appoint delegates to attend the Congress of the Institute to be held at Bristol from the 19th to the 24th of May.

The PRESIDENT: Is it your wish that we send delegates? They have no Veterinary Section, but there are Sections of Pathology, Bacteriology and Bio-Chemistry, Tropical Diseases, and State Medicine.

Mr. COLEMAN: The fact that there is no Veterinary Section is all the more reason why we should be represented. We must get into touch with these bodies and show that we are interested in their work. It might result in the establishment of a Veterinary Section.

Colonel YOUNG supported and, on the proposition of Professor WOOLDRIDGE, seconded by Mr. MCKINNA, it was agreed that the Association be represented at the Congress. The Council appointed the President, or his nominee, to attend, expenses to be paid.

(9) From the Hon. Secretaries of Divisions *re* the Presidential Chain of office.

The SECRETARY: I have to report that, since the last quarterly meeting, the following Divisions have contributed the sum of £2 towards the cost of a link in the President's Chain:—Central, Derbyshire, Lincolnshire and District, Mid-West and South Wales, North Midland, North of Scotland, West of Scotland, South-Eastern, the Veterinary Research Club, and the Yorkshire Division.

The PRESIDENT: I think we may congratulate ourselves on the response we have received from Divisions (hear, hear). I think I am right in stating that the only Divisions which have not yet forwarded their donations are those of which no meetings have been held since the proposal was put forward.

(10) From the Secretary of the Ministry of Agriculture and Fisheries, enclosing a copy of Diseases of Animals Branch Circular Letter No. 39.

The SECRETARY read the Circular Letter, which was as follows:—

Ministry of Agriculture and Fisheries,
7 Whitehall Place, London, S.W.1.

DISEASES OF ANIMALS BRANCH CIRCULAR LETTER No. 39.
To Local Authorities for the purposes of the Diseases of Animals Acts, 1894 to 1925.

6th April, 1926.

Sir,—I am directed to refer to Diseases of Animals Branch Circular Letter No. 34, dated 16th January last, in which it was suggested that pursuant to the recommendations of the Departmental Committee on Foot-and-Mouth Disease, Local Authorities should consider the desirability of appointing the Chief (or Head) Constable as the Chief Inspector of the Local Authority for the purposes of the Diseases of Animals Acts, where this has not already been done.

It is clear from replies received from Local Authorities to that Circular Letter that the appointment of the Chief Constable as Chief Inspector may not be found to be appropriate to the case of many of the larger boroughs and that there is a strong feeling that the existing organisation in those boroughs should not be disturbed.

The question has recently been reviewed by the Minister and in reply to a question in the House of Commons on the 23rd ultimo, he announced his decision in the following terms:—

"I have made full enquiries into the present methods of administration, and while I still consider that in counties the appointment of the Chief Constable as Chief Inspector is conducive to efficiency, I have decided to leave the appointment of Chief Inspectors entirely to the discretion of Local Authorities."

In view of this decision the recommendation of the Departmental Committee with regard to this matter will not be made the subject of legislation.

The majority of the County Local Authorities have already adopted the course recommended by the Departmental Committee, and the Minister desires me to express the hope that the remainder of the counties may see their way to make similar arrangements at a convenient opportunity.—I am, Sir, your obedient servant, A. D. HALL.

The PRESIDENT: This letter, of course, means, gentlemen, that there will be no alteration in the present method of procedure (hear, hear). It has been suggested to me that the Deputation appointed by this Council should wait on the Ministry of Agriculture, in any case, in order to let them know that we are continuing to take an interest in this matter. I do not think that is necessary, because the fact that the Ministry have sent this Circular Letter, addressed to Local Authorities, to this Association shows that they are aware of our interest.

Professor WOOLDRIDGE: I presume that a reply will be sent expressive of our gratification that it has been decided to leave the appointment of Chief Inspectors entirely to the discretion of local authorities.

(11) From Major H. Brassey-Edwards, Hon. Secretary of the Veterinary Medical Association of Kenya Colony and Protectorate:—

Office of the Chief Veterinary Officer,
P.O. Box 323, Nairobi,
9th March, 1926.

The Secretary,
National Veterinary Medical Association
of Great Britain and Ireland,
10 Gray's Inn Square, London, E.C.

Sir,—I have to request that the newly-formed Veterinary Medical Association of Kenya Colony and Protectorate should receive the official recognition of your Association.

At the first Annual General Meeting, at which eleven members of the Royal College of Veterinary Surgeons were present, it was proposed and seconded and carried with acclamation—"That this Association is in favour of

affiliation to the Veterinary Medical Association of Great Britain and Ireland, and the Honorary Secretary be requested to make the necessary application."

I am not aware if the constitution of the National Veterinary Medical Association of Great Britain and Ireland includes the necessary right to affiliate any Colonial Veterinary Medical Association to the parent Association, and I should be glad to hear from you on the matter.

I enclose a copy of the local Association's rules.

There are eighteen Fellows at present belonging to the Association with prospect of several new members.—Yours faithfully, H. BRASSEY-EDWARDS, *Hon. Secretary.*

The PRESIDENT: Article 21 says, "Such English and Colonial Associations as shall apply to the Council, may, after approval by and at the absolute discretion of the Council, be affiliated to the Association on payment of the annual affiliation fee as may be determined from time to time," so that I think that not only may we welcome the Veterinary Medical Association of Kenya Colony and Protectorate, but that we may take it as a matter of very earnest congratulation that we should have been favoured with this application. (Cheers.)

Dr. BRADLEY: I support very heartily the sentiments expressed by the President; it is indeed gratifying to know that affiliation is being sought by Associations overseas and I suggest that this Council sends a very cordial letter agreeing to the affiliation of the Kenya Colony Association. (Hear, hear.)

Lt.-Colonel YOUNG: I have much pleasure in seconding that.

Mr. COLEMAN: And ask them for a link, Sir. (Laughter.)

ELECTIONS TO MEMBERSHIP.

The following gentlemen, having duly filled in nomination forms and paid their subscriptions, were elected as members of the Association, on the proposition of Mr. WILLETT, seconded by Mr. REES: Messrs. A. J. Baxter (Lechlade), W. T. M. Browne (Naas), E. G. Conisbee (East Horsley), E. R. Corrigall (London, S.W.1.), David Coull (Buckie), H. H. Curson (Pretoria), G. D. W. Davidson (Sunderland), Clement Elphick (Newcastle-on-Tyne), A. C. Ford (Airdrie), R. R. Ghulati (London), G. N. Gould, Junr. (Southampton), D. C. Greene (Mageney), H. S. Head (New Romney), G. G. Howard (Saundersfoot), M. F. Kilcoyne (Tubbercury), N. S. King (Leatherhead), E. F. McCleery (Glasnevin), Jas. McClemont (Derby), J. A. McCutcheon (Lymington), D. F. McKinney (Ballymena), W. C. Maguire (Tewkesbury), R. J. Nolan (Carlow), A. F. O'Dea (Glasnevin), J. Paterson (Horncastle), R. H. Pinching (Horsham), M. J. Reidy (Hong Kong), T. Rennie (Kirkintilloch), E. D. S. Robertson (Edinburgh), J. Share-Jones (Acrefair), R. S. Smyth (Ruthin), A. R. Smythe (London, N.W.), G. S. Sutton (Horeham Road), C. T. Trevers (Warrington), G. Tullis (Kirkcaldy), T. Walker (Blackpool), W. L. Weipers (Bishopbriggs), A. Wilson (Ayton), and A. A. Wilson (London).

REPORTS OF COMMITTEES.

APPOINTMENTS COMMITTEE. In the temporary absence of Mr. A. Gofton, the Chairman of the Committee, the following report of the Appointments Committee was read by the SECRETARY:—

A meeting of this Committee was held this morning with Mr. Gofton in the Chair.

The Secretary reported that the appointment of a whole-time veterinary inspector for the county of Kirkcudbright had now been made, and that, in consequence of the representations made by the Association, the salary attaching thereto had been increased by £50 to £450 per annum.

The report was received and adopted without discussion.

ORGANISING COMMITTEE. Dr. BRADLEY, Chairman, read and moved the reception of the following report of this Committee:—

A meeting of this Committee was held in this room this morning, Dr. Bradley presiding.

The Secretary reported the replies he had received from the Secretaries of Branches and Divisions regarding the proposal to hold regular meetings of all the Branches.

The Committee agreed that it should be left to the President and the Chairman of the Committee to formulate some suggestions for the re-grouping of Divisions, as it was felt that under the present system of grouping the arranging of Branch meetings was rendered difficult owing to the distance which members of Divisions would have to travel to attend them.

The Secretary announced the steps which he had taken to enlist the support of the Federation of Medical and Allied Services in an endeavour to secure qualified veterinary supervision of the work of the Societies undertaking the treatment of sick animals of poor persons.

The Chairman reported the receipt of a communication from Mr. Gordon Knox, stating his terms for the utilisation of his services in securing the introduction of inspired articles in the lay press. It was decided to leave the matter in abeyance pending the receipt of further information from the Solicitor.

Consideration has been given to the following proposals submitted by Captain Hamilton Kirk concerning the functions of the Committee:—

1. To educate the general public to a better appreciation of the veterinary profession, as regards its importance and utility to the State; its knowledge; and its scientific training.

2. To advertise (discreetly and unassumingly) the profession and its activities, in a precisely similar manner to that adopted by the medical profession.

3. To protect the interests and prestige of the profession.

These proposals were approved, together with the following additional recommendation put forward by Mr. Gofton:—

"That the Association should encourage the appointment of representatives to Congresses and other public meetings, particularly those which were attended by representatives of other professions and of public authorities. That in choosing representatives to attend these Congresses careful consideration should be given to the

selection of men who could speak with authority on the subjects under discussion."

Captain KIRK: Arising out of that report, I should like to ask the organisers of the Congress at Dublin what steps they propose to take to give publicity to the proceedings at Dublin. We had practically no publicity in connection with the Cambridge congress last year and I should like to see more this year.

The PRESIDENT: That is a matter which we cannot discuss in this Council—it is one which must be left to the Provisional Committee.

Professor CRAIG: Perhaps I might be allowed to say, Sir, however, that that matter is receiving the greatest possible amount of attention on the other side, but we may require to enlist the services of this Association in order to ensure that publicity be given on this side to the proceedings of the Congress.

Professor WOOLDRIDGE: When the Congress was held in Dublin last time the leading papers in Ireland gave us very excellent publicity.

The report was received and adopted.

PARLIAMENTARY COMMITTEE. The SECRETARY read the following report of this Committee, the President (Chairman) moving its reception and adoption which were carried without comment:—

A meeting of the Parliamentary Committee was held this morning with the President in the Chair.

The Committee considered correspondence received from a member in reference to the retention of drugs by the Customs Authorities, together with communications received from the Home Office relative thereto. The Secretary reported the action taken by him in the matter, which was approved.

A resolution was submitted from the Dumfries and Galloway Division in connection with the proposed Bill to amend certain provisions of the Diseases of Animals Acts. A letter from the Ministry of Agriculture on this subject was read, from which it appeared that the objections raised in the resolution no longer obtained.

VETERINARY INSPECTORS AND PUBLIC HEALTH COMMITTEE. The SECRETARY read the report of this Committee, which was as follows:—

Two meetings of this Committee have been held.

Upon the recommendation of the Committee a Special Meeting of Council has been held at which consideration has been given to Diseases of Animals Branch Circular Letter No. 34, dated 16th January, 1926, with reference to the appointment of the Chief Constable as the Chief Inspector under the Diseases of Animals Acts. At a meeting of the Committee held this morning, it was announced by Mr. Gofton that the Ministry has now departed from the position taken up in the circular letter above referred to and is leaving matters entirely to the discretion of local authorities.

The Committee has given consideration to a reply received from the Ministry of Agriculture in reference to the Association's representations to them on the subject of the notification of veterinary inspectors and other veterinary surgeons of the occurrence of outbreaks of foot-and-mouth disease. It was agreed that the Ministry be further approached with the request that they should send reports of the occurrence of outbreaks of foot-and-mouth disease direct to veterinary inspectors holding appointments under the Diseases of Animals Acts and stating that this Association believes that such a course would contribute considerably to the efficiency of the control of foot-and-mouth disease and assist in bringing about earlier notification.

The Committee decided that the suggestion be made to the Ministry of Health that an explanatory note be introduced into Part IV. of the Draft Orders proposed to be made under the Milk and Dairies (Consolidation) Act, 1915, quoting the section of the Act concerned with the inspection of cattle (Section 15, Sub-section 4).

It was decided that it be left to Messrs. Coleman, McKinna, Roberts and the Hon. Secretary to consider information received in connection with fees for work done under the Milk and Dairies (Consolidation) Act, and to endeavour to formulate ideas to furnish the basis upon which further procedure should be taken.

The SECRETARY also read the following recommendations made by the above-named gentlemen:—

A minimum fee of £1 1s. 0d. up to 20 animals for the clinical examination of dairy cows under the Milk and Dairies (Consolidation) Act, 1915, with a charge of 1s. per head for each animal over 20, with a maximum of £3 3s. 0d. for any individual herd, plus mileage allowance.

That the veterinary inspection of cattle in dairies should be carried out at least three times a year.

The PRESIDENT: In the absence of the Chairman of this Committee (Mr. Male) I formally move the reception and adoption of this report.

Major SIMPSON seconded and, the motion having been agreed without discussion, the PRESIDENT said: I have no doubt that you have carefully noted what was said with regard to these fees and that your assent to this report without any discussion implies that you approve of them.

Mr. MCKINNA: I am glad you said that, Sir, because we were rather hurried in our deliberations and were hoping that the views of the Council on our recommendations would have been freely expressed, and careful consideration given to them.

The PRESIDENT: Lest there should be any idea that we are curtailing the discussion, I wish to say that I am quite willing to hear anything that may be said in this connection.

At the request of the President, the SECRETARY re-read the recommendations in question.

Major SIMPSON: I take it for granted that that sub-committee's report will go to the main committee and be discussed before it comes to the Council.

The PRESIDENT: That is the proper procedure but, although the Orders do not come into operation until July, it was felt that, as the next meeting of Council is not until the latter end of July, a scale of fees should be agreed upon as soon as possible, especially bearing in mind that the county councils would be considering those Orders in the meantime and deciding as to what in their opinion is a proper scale of fees for the work. In addition, numerous enquiries had already been received at the offices of the Asso-

ciation requesting guidance and it is highly desirable that the officials should be in a position to give some definite information.

Mr. COLEMAN: It was, I think, practically an adjourned meeting of the Veterinary Inspectors' Committee, necessitated by the fact that another committee was waiting to sit.

The PRESIDENT: Is there any further discussion on the question of fees?

Professor WOOLDRIDGE dissented from the recommendation that there should be a maximum fee.

Mr. COLEMAN: A maximum should be fixed, but it should not be more than £3 3s. 0d. for one farm.

Major SIMPSON: I seconded the reception and adoption of the report as I understood that it was the report of a sub-committee but, if I may, I will withdraw my seconding, because the matter of fees is one which cannot be passed over in a minute and, personally, I am not going to take the responsibility of accepting those figures. The gentlemen who drew them up admit that they had perforce to come to hurried decisions and I do not think that these hurried decisions are always the wisest.

Colonel YOUNG suggested that the recommendations should be submitted to the Divisions throughout the country in order to secure the expressions of their opinions.

The PRESIDENT: It was assumed, and I think rightly, that the matter was one of urgency. I have no wish, however, to hurry deliberations on the subject.

Mr. DAWES: I suggest that the matter be referred back to the parent committee, which will meet in July—a week before the Orders come into force.

Mr. COLEMAN: We were afraid that if we had too big a maximum it would be a case of "killing the goose which lays the golden egg." I think £3 3s. 0d. is a very fair fee—we have far more dairies with 40 cows than with 100. I think we should deal with this matter at once; delay is going to allow local authorities to make their own fees and we shall have every county adopting different fees. I do not mind so much what maximum is agreed upon by this Council, but I do impress upon you that this is a matter of great urgency, and I would like us to have our house in order before the Order comes into force in July.

Professor WOOLDRIDGE: I would suggest, if it is agreed that we proceed with the matter now, that the reference to a maximum fee be omitted altogether.

Mr. COLEMAN: The local authorities insist on having a maximum fee. I can give you an instance. Under the Tuberculosis Order we had 1s. a cow—they have now restricted the fee obtainable on one farm to £1, including the fee for reported animals.

Mr. ROBERTS: Although I considered these fees quite inadequate for the work, nevertheless I agreed to the majority decision of my colleagues. At the same time, I should like to emphasise that we want to have a scale of fees which we can present to our local authorities not on the 13th of July, but some time previous to that. If I am going to state a fee which is not in agreement with that charged by the men in the other districts, it is going to cause more friction than the Tuberculosis Order itself has done. I feel, with Mr. Coleman, that we should be able to give ourselves and others throughout the country a lead in this matter, so that we shall not have it thrown at us that it is impossible to arrange a scale of fees under the Milk and Dairies Act because we differ so much amongst ourselves. I support Mr. Coleman in his view that we, as a Council, ought to formulate some scale of fees and I hope this Council will help us to come to a correct and just decision in this matter.

The PRESIDENT: You have heard the recommendations which have been made to us and I have had no definite proposition in regard to their alteration. Is it, therefore, still your wish that they should be accepted as they stand?

It was proposed "That the maximum be £5 5s. 0d. for one day's work," and the opinion expressed that no veterinary surgeon should go to and from a farm and there conscientiously examine a herd of 100 cows for less than £5 5s. 0d.

Mr. R. HUGHES: There are not many dairies, outside Cheshire, where 100 cows are kept and the difficulty will be with the dairies of from 30-50 cows. If we are going to charge the maximum of £5 5s. 0d. it will, as Mr. Coleman has said, "kill the goose that lays the golden egg."

Professor WOOLDRIDGE: As an amendment, I propose that the reference to a maximum be omitted and that you have your sliding scale without reference to the number of cows.

Mr. MCKINNA: I think that would meet the whole situation.

Mr. COLEMAN: Local authorities immediately put a maximum fee on any farm directly you have a fixed charge of 1s. per head. I can assure Professor Wooldridge that not only in Wiltshire, but in Hertfordshire, Dorset, Somerset and, I believe, in Devon, the local authorities will immediately say: "We are not going to pay any definite sum per cow for inspection." We shall have them giving 1s. per cow up to 40, and after that we have to do it for nothing. Local authorities always fix a maximum—I had to examine 3,000 sheep for suspected scab the other day for the magnificent sum of £1. They will fix a maximum, if you do not.

Captain KIRK: It seems to me imperative, from what has been said, that there should be a maximum.

Mr. HUGHES supported the suggestion that a maximum should be fixed as the amount which could be earned in one day, but again expressed a fear lest it should be placed at too high a figure.

Mr. WILLETT seconded the proposition.

Professor Wooldridge's amendment failed to find a seconder and the proposition, on being put to the meeting, was carried by a large majority.

The recommendations, as then approved, read as follows:—

"A minimum fee of £1 1s. 0d. up to 20 animals for the clinical examination of dairy cows, with a charge

of 1s. per head for each animal over 20, and a maximum of £5 5s. 0d. for one day's work; mileage allowance in addition.

"That the veterinary inspection of cattle in dairies be carried out at least three times per year."

FINANCE COMMITTEE. The SECRETARY read the following report of this Committee:—

The Finance Committee has held three meetings since the date of the last quarterly meeting of Council.

Negotiations are still proceeding between the Solicitor, the Auditors and the Inspector of Taxes in regard to the claim made against the Association in respect to the payment of Income Tax on sales of the *Veterinary Record* to non-members.

The Treasurer has been authorised to purchase on behalf of the Association £1,000 5 per cent. War Stock, 1929-47.

The sum of £250 has been transferred to the Deposit Account, bringing the total amount now standing on deposit to £500.

The Committee has authorised the purchase of a Royal typewriter, with brief carriage, at a cost of £27 15s. 9d. net.

Following upon the receipt of certain suggestions from the Auditors with regard to the disposal of various items appearing in the balance sheet for the six months ended 31st December, 1925, the Committee recommend:—

(*a*) That the amount of £325 8s. 10d. under the heading "Preliminary Expenses" be written off as follows:—£125 8s. 10d. at once, and £100 in respect of each of the two subsequent years.

(*b*) That the sum of £60 in respect of payment for the Presidential Chain of Office be written off at once.

(*c*) That the sum of £30 16s. 0d. set aside for the use of the Editorial Committee, be transferred to the General Reserve Account.

The Committee recommend that the donation of £5 5s. to the Federation of Medical and Allied Services be continued for a further twelve months, the matter to be reviewed at the expiration of that period.

The Solicitor reported the steps he had taken to secure the transference of the assignment of the lease of the offices of the Association from the late General Secretary to the Council. The action of the Solicitor was approved and it was agreed to recommend that the Seal of the Association be affixed to the Deed of Assignment.

The PRESIDENT, in the absence of the Chairman (Mr. McIntosh), moved the reception and adoption of this report.

Colonel YOUNG: May I ask if the typewriter is of British manufacture?

The PRESIDENT: The answer is in the negative.

Colonel YOUNG: Then I wish to record an emphatic protest and I decline to vote on the report.

The PRESIDENT: I might explain that it was not because a number of typewriters, including those of British manufacture, was not tried. This particular typewriter appeared to give the most satisfactory results and it was therefore decided to purchase it. That is just a statement of fact.

The Council then received and adopted the report, Colonel Young abstaining, and also, by resolution, authorised the transference of the assignment of the lease of the offices of the Association from the late General Secretary to the Council, and the affixing of the Seal of the Association to the Deed of Assignment.

EDITORIAL COMMITTEE. Major SIMPSON (Chairman) read and moved the reception and adoption of the report of this Committee, which was as follows:—

Thirteen meetings of the Editorial Committee have been held during the past quarter.

During this period the following gentlemen have intimated their willingness to serve as collaborators in connection with the *Veterinary Record*:—

R. L. Cornell, B.Sc., M.R.C.V.S.
R. E. Glover, B.Sc., M.R.C.V.S.
J. P. Rice, B.Sc., M.R.C.V.S.
W. L. Stewart, M.R.C.V.S.
W. R. Wooldridge, B.Sc., M.R.C.V.S.

The Committee have given earnest consideration to the question of improving the supply of clinical articles for publication in the *Record*. With this end in view, the services of the Officers of the Association have been utilised in bringing the matter to the attention of such Divisions as they have visited. It is proposed to publish, at fairly regular intervals, an advertisement in the *Record* requesting practitioners to record their notes of interesting cases and to forward these for publication. In addition, numerous requests have been made by letter to gentlemen whom it was felt would be in a position to help in this respect. As a result of these measures the supply of clinicals has increased to some extent, and it is hoped that when they have been longer in operation the needs of the *Record* in this connection will be met.

Arrangements have been made for the provision, at regular intervals, of translations from French and German veterinary literature, and the question of the supply of translations from other foreign veterinary literature is under consideration.

With a view to securing more material for abstracting and also for the purpose of making the *Record* better known abroad, the exchange list has been augmented by the addition of various veterinary periodicals.

The Committee are glad to report that a number of new firms have placed orders for the insertion of announcements in the advertisement pages of the *Record*. To meet the demand made by the majority of these firms for space facing reading matter, and also to enable those who so desire to abstract the advertisement pages from the *Record* when binding, it was agreed that the insertion should be made of a four-page sheet in proximity to the centre of the paper.

The question of the appointment of Colonial Correspondents has been considered. A list of gentlemen who might be asked to serve in this capacity has been drawn up and the Committee are now awaiting replies to the requests sent to them in this connection.

The Committee has had under consideration the question of the publication in the *Record* of articles dealing with "Veterinary Jurisprudence." They are in touch

with the Association's Solicitor and Mr. J. R. Gibb, of Edinburgh, on this matter.

Mr. COLEMAN: In this connection, on occasions I have noticed that pages containing matter which we should like to retain in our bound copies of the *Record* have had advertisements on the other side.

Major SIMPSON: I can tell Mr. Coleman that that is not likely to occur again. During the course of the increase in our advertisements we were bound to give a single page to advertisers and we had to use the other side for literary matter. I do not think that that has occurred for a month or two now. At the present time you will find that your four-page advertisement sheet containing announcements which, by requirement of the advertisers, have to face reading matter, is entirely separate, thereby enabling its removal in its entirety when the volume comes to be bound. We were obliged, to begin with, to print on the back of a page on which there was literary matter, but it was done much to our own regret and we have remedied this at the earliest possible moment.

The report was received and adopted.

NATIONAL CLEAN MILK SOCIETY'S CONFERENCE.

The PRESIDENT: Mr. Male, who was appointed our delegate to the meeting convened by the National Clean Milk Society to discuss arrangements for the holding of a Conference on the subject of milk in relation to public health, is unfortunately unable to be with us, but he has sent us his report, which I will ask the Secretary to read.

The SECRETARY read the report, as follows:—

"I beg to report that I attended a meeting convened by the National Clean Milk Society, as your representative, to discuss the formation of a Conference Committee on 'Milk in relation to Public Health.'

"The meeting was attended by a large number of delegates from different Societies interested in the question (names enclosed). An Executive Committee was formed, to which I was elected, and further meetings were held.

"It was decided that a one-day conference should be held, probably on June 2nd, at the Guildhall. Mr. Neville Chamberlain will preside at the afternoon session and Mr. Buckley in the morning. The speakers will probably be Dr. Harriette Chick, on "Milk in relation to Public Health,' or failing her, Professor Drummond.

"A fee of one guinea will be charged to each delegate, with the exception of a few at a lower rate, the National Clean Milk Society being responsible for the finances.

"It will be noted that the Producers' Societies are not taking part, as this conference will treat the subject from a public health point of view, making suggestions as to improvements that might be brought about through the instrumentality of (*a*) The Public; (*b*) Public Authorities, and (*c*) The Government.

GEO. P. MALE."

The PRESIDENT: That is our delegate's report, and I am sure that you will wish to thank Mr. Male for having attended on our behalf and for having done the work so well (hear, hear).

(To be continued).

DIVISIONAL REPORTS.

Midland Counties Division.

ANNUAL MEETING AND DINNER AT BIRMINGHAM.

The annual meeting of the Midland Counties Division was held at the Grand Hotel, Birmingham, on Friday, February 26th. Mr. T. Slipper, of Sutton Coldfield, the retiring president occupied the chair, and there were also present the following members:—Colonel Marriott (Birmingham), Messrs. H. Tudor Hughes (Oswestry), F. L. Gooch (Stamford), W. H. Brooke (Handsworth), J. Cormack (Coventry), W. F. Aston (Derby), W. Trigger (Newcastle-under-Lyme), H. W. Dawes (West Bromwich), J. Powley, (Knaresborough), R. Murray (Rugeley), W. L. Sheffield (Leicester), W. E. Ison (Atherstone), L. W. Heelis (Solihull), R. P. Palmer (Warwick), J. Martin (Wellington), A. Mackenzie (Market Drayton), H. W. Griffiths (Birmingham), J. W. Conchie (Kidderminster), D. J. Anthony (Brierley Hill), J. Scott (Leamington), A. A. Forsyth (Cannock), T. N. Gold (Redditch), F. E. Somer (Birmingham), G. R. Benbow (Leicester), H. W. Steele-Bodger (Tamworth), J. R. Barker (Hereford), R. Over (Rugby), J. E. Hutchinson (Eccleshall), R. L. Green (Dudley), and the Hon. Secretary (Mr. H. J. Dawes, West Bromwich). The visitors present were:—Mr. J. Clarkson (President of the Royal College of Veterinary Surgeons), Professor Basil Buxton (President of the National Veterinary Association), Dr. Graves (Birmingham), and Dr. Pickworth (Birmingham).

Apologies for absence were announced from the following:—Sir John M'Fadyean, Sir Stewart Stockman, Professor Penberthy, Major Hobday, Messrs. M. Sadler, J. J. Burchnall, E. Pinger, R. C. Trigger, W. J. Tart, C. J. Byner, Trevor Spencer, H. B. Hiles, J. Martin, Jun., A. Hamilton, R. P. Holmes, R. Lake, C. S. Hunting, R. L. Phillips, E. W. Parkes, J. R. Carless, A. Beddard, A. E. Ferguson, W. R. Blackwell, T. J. Brain, J. A. R. Jones, E. Hall, J. G. Allen, T. Ludlow, T. H. Hobson, M. Tailby, D. Forwell, E. Brayley Reynolds, H. S. Reynolds, W. Grasby, W. Dale, J. T. Primer, H. S. Cockburn, G. Beaumont, A. W. Findlay, E. O'Neill, W. Hoddinott, G. F. Banham, R. Hughes, C. H. Barber, H. C. Gregory, J. McLauchlan, F. Chambers, H. L. Pemberton, C. Parsons, E. V. Tyreman, S. M. Woodward, and others.

The minutes of the previous meeting having been confirmed, Mr. George Eaton, of Hallatin, Leicestershire, was nominated for membership, and Mr. A. E. Ferguson, of the Ministry of Agriculture staff, nominated at the last meeting, was unanimously elected a member.

THE "NATIONAL" ASSOCIATION.

The Hon. Secretary read a letter from the National Veterinary Medical Association, with regard to the functioning of branches. It was suggested that the various divisions should forego one meeting in favour

of a branch meeting. The Midland Division belonged to the Northern Branch.

Professor BUXTON added that the object was to develop the system of local Government, which more regular meetings of the branches would serve to accomplish.

Mr. TUDOR HUGHES and Mr. ASTON approved the idea, the latter observing that there was no need, because of a branch meeting, to suspend an ordinary meeting of that Division.

The HON. SECRETARY proposed that that Division should get into touch with the other Divisions in the Northern Branch and report the result at the next meeting.

This was seconded by Mr. GOOCH and agreed to.

REPORT OF THE COUNCIL.

The HON. SECRETARY reported the result of a meeting of the Council, held earlier in the day, when the following recommendations were made:—that the next meeting of the Division be held at Derby; that the Derbyshire Association be invited to hold a joint meeting, and that Mr. R. Boutflour, B.Sc., Agricultural Officer under the Wiltshire County Council, be asked to deliver an address on the management and rationing of dairy cattle.

That the members of the Division be urged to support the candidature of Mr. R. Hughes in the forthcoming election of the Council of the Royal College of Veterinary Surgeons, Mr. Hughes being the nominee of the Division; and

That the following be appointed to office during the ensuing year: Mr. J. Powley, *President*; Messrs. T. Slipper, S. M. Woodward and R. Hughes, *Vice-Presidents*; Mr. W. H. Brook, *Treasurer*; Mr. H. J. Dawes, *Hon. Secretary*; Messrs. F. L. Gooch, J. Cormack and H. Tudor Hughes, *Auditors*; and Messrs. T. H. Hobson, W. F. Aston, R. Palmer, J. W. Conchie, A. Mackenzie, H. W. Steele-Bodger and L. W. Heelis, together with the other officers, *Members of the Council*.

On the motion of the CHAIRMAN, seconded by Mr. ISON, the report was adopted.

TREASURER'S STATEMENT.

The report and balance sheet, submitted by the TREASURER, showed the balance in hand to be £106 6s. 0d., compared with £107 19s. 0d. a year ago. Members' subscriptions amounted to £55 15s. 0d., and arrears outstanding were £48. Special items of expenditure included £10 5s. 0d. to the Victoria Benevolent Fund (£5 5s. 0d annual subscription and £5 as a special donation), £5 5s. 0d. to the Garnett Memorial Fund, and £2 2s. 0d. towards the cost of the National President's Chain of Office.

Mr. GOOCH, who said the accounts had been audited and found correct, moved that they be passed.

This was seconded by Mr. CORMACK and carried.

ELECTION OF OFFICERS.

The PRESIDENT moved that Mr. Powley be elected to succeed him in the chair, remarking that the honour had been fully earned.

The HON. SECRETARY, in seconding, said Mr. Woodward would have been president in the ordinary course, but private affairs compelled him to decline the position for the president. The Council, however, had induced Mr. Woodward to continue as senior vice-president, and they hoped he would fill the office the following year. He suggested that a letter of sympathy be sent in the name of the Division to Mr. Woodward on the illness of his wife, and this was agreed to by acclamation. Referring to Mr. Powley, the Hon. Secretary said he was not only one of their most regular attenders, but he had read them several papers of topical interest and had fitted himself in every way to become their president.

The resolution was carried and Mr. Powley said he accepted the office, satisfied that he could count upon the loyal co-operation of the whole body of members.

Mr. Powley proposed the re-election of Mr. Dawes as Hon. Secretary and said it was the knowledge that Mr. Dawes would be at his right hand that had persuaded him to accept the presidency. No Division was better served and he hoped the day was far distant when Mr. Dawes would cease to be their executive officer.

The PRESIDENT said he would like to second this motion, in order to confess how lost he would have been in the chair without the support and advice of Mr. Dawes.

This having been carried, Mr. Dawes said he had held the office for thirty-five years, and he would have given it up long ago had he not been heart and soul in the work.

The other officers and the Council were elected in accordance with the recommendations contained in the Council's report, and a vote of thanks for past services moved in felicitous terms by Mr. MARTIN, was heartily endorsed.

Royal Sanitary Institute Congress, London, July 5th to 10th, 1926.—It was unanimously resolved that the President, Mr. J. O. Powley be elected as delegate to the above Congress.

DISTINGUISHED VISITORS.

The HON. SECRETARY remarked that the visitors included two distinguished members of the Veterinary profession in the presidents of the Royal College of Veterinary Surgeons and the National Veterinary Association and, on behalf of those present, he begged to offer them a most cordial welcome.

Mr. CLARKSON and Professor BUXTON both expressed the pleasure it afforded them to attend a meeting of the Midland Division. Mr. Clarkson said this was the first time he had been amongst them, and he was greatly impressed with the spirit of comradeship which the members showed. The practitioner who knew his neighbour generally discovered that he was not so bad after all, and there was no better way of getting to know each other, than by fraternising at meetings such as that.

Dr. T. C. Graves, M.D., B.S., B.Sc., F.R.C.S., L.R.C.P., M.R.C.V.S., then read a paper on "Some Recent Observations on Human and Animal Diseases."

[Dr. Graves' paper, together with the discussion to which it gave rise, receives publication elsewhere in this issue.—Ed.].

The PRESIDENT moved a vote of thanks to Dr. Graves for his paper, and

The HON. SECRETARY, in seconding, said the effort had fulfilled their highest expectations.

After a brief acknowledgment from Dr. Graves, Mr. TUDOR HUGHES gave notice that at the next quarterly meeting he should move that Dr. Graves be elected an honorary associate of the Division. He thought it was a compliment Dr. Graves deserved, and the Division itself would be very proud to place his name on the membership roll. Dr. Graves, besides holding the highest medical degrees, was also a veterinary surgeon.

THE ANNUAL DINNER.

The annual dinner followed, with Mr. Slipper again in the chair, but as the principal guests were obliged to leave early, the toasts had to be submitted between the courses, which involved exceptional brevity in the speeches.

"The King" was, of course, honoured and then Mr. POWLEY gave "The Royal College of Veterinary Surgeons," declaring that the Council was comprised of men of integrity, in whom they, the profession, had the most implicit confidence.

Mr. CLARKSON, replying as President of the Royal College, said there was no grindstone at Red Lion Square, even if members of the Council took an axe there. He believed, however, that they had solely at heart the best interests of the profession, and he was glad to have lived long enough to see it take its rightful place in the scientific and medical world.

Professor BUXTON proposed "The Midland Counties Veterinary Medical Association," which he described as a real live wire. The Midland was one of the oldest and one of the largest divisions of the "National," and no division had better meetings or displayed a more friendly spirit. It was always a pleasure to visit Birmingham, which was the Division's headquarters and he wished them continued success.

The PRESIDENT, in acknowledgment, said the Division tried to live up to its reputation, and it was a pleasure to be told that it succeeded.

"The Visitors," proposed by Mr. TUDOR HUGHES, and coupled with the names of Dr. Graves and Dr. Pickworth, was the concluding toast.

H. J. DAWES, F.R.C.V.S.,
Hon. Secretary.

The Veterinary Officers at the Royal Hackney Society's Show at Doncaster this year were: Mr. C. Herbert Sheather, F.R.C.V.S. (Chief); Mr. E. F. Angler, M.R.C.V.S. (Doncaster); Mr. John Brown, M.R.C.V.S., Perth; and Mr. L. W. Wynn Lloyd, F.R.C.V.S., Carnarvon.

Western Counties Division.

THE WORKING OF THE TUBERCULOSIS ORDER.

(*Continued from page* 366.)

Major ASCOTT, continuing his remarks in opening the discussion on the above subject, said:

The Order begins creating difficulties by including animals within its scope which in actual practice seemed not to be wanted. In Clause 2, Sub-sections 2 and 3 include "bovines other than cows," *i.e.*, animals of either sex other than milking cows, whereas, according to the discussions which have taken place and the tone of the explanatory circulars issued later, it would seem that the Order was primarily meant to protect the milk supply only.

Sub-section 2 of the same Clause has also caused trouble because of the contradictory definitions issued as to what should constitute emaciation.

Clause 4 has given rise to some difficulty because, taken in conjunction with Clause 2, it was first thought by some of us that the Local Authority had no option if the *owner* reported a suspected case but to send a veterinary inspector but, if we read the first four lines carefully, I am of opinion the Local Authority took up the right stand in refusing to send a veterinary inspector unless the owner had first obtained the opinion of a qualified veterinary surgeon. The owners, in many cases, took advantage of the Order to obtain an opinion at the cost of the county and the only logical course open to the Local Authority was to adopt the procedure before mentioned which is certainly much to be preferred to instructing the local policeman to visit and express an opinion as to whether the case is suspicious or not. Having regard to the difficulty which I, at any rate, experience in many cases in expressing an opinion without the aid of the tuberculin test, I much prefer the present procedure. My arrangement now with the Local Authority is that the owner is told to consult me and I tell the owner that if, when I visit, I can say the case ought to be reported, I treat this as my first visit for the Local Authority, but if it is a case that ought not to be reported, the owner must pay and this plan is working satisfactorily.

In connection with Clause 4 comes the question of diagnosis, and here I have often found difficulty in carrying out the instructions first issued "not to apply this tuberculin test as it is rarely necessary to do so." I have been surprised to find this statement supported by many eminent veterinary surgeons in the veterinary Press and have come to the conclusion that I am very inefficient as I have had many cases in which I certainly would not risk the *post-mortem* contradicting my opinion.

We now come to Clause 7, concerning valuation. Personally, this duty has caused me more anxiety than any other part of the Order and I shall be glad to hear other members' views on this. By the way, can anyone tell me why the udder is not mentioned in Clause 9, para. (4), sub-para. (d), in defining advanced tuberculosis?

The circular of 12th October, 1925, was meant to make some points more clear, but I am afraid I

must be very dense as I do not even now quite appreciate some of it. The definition of emaciation given in this circular was not fair to the owner as, if followed, it limited the value to £2 5s. and the whole paragraph seems to limit the Order to wasters, of which the owner in any case would get rid without the Order and the nuisance of the police and their multiplicity of forms. It is very difficult to differentiate many cases of Johnë's disease from tuberculosis and the value does not warrant the cost of applying the tuberculin test. The circular memorandum of 23rd February, 1926 is a great improvement, except that I think, from the owner's point of view, it almost definitely restricts our enquiries to the animals obviously dangerous to the public. You will note that Clause 4 practically contradicts Clause 3 of the first circular on the definition of emaciation.

Re fees and examination of other animals—there seems to be some variation in the methods adopted by various inspectors. I examine and charge for those in actual contact only; not all the animals on the farm.

One minor point occurs to me for mention. The preliminary enquiry form is not very happily worded. Clauses 2 and 3 caused me a little trouble to start with and this summary table gives no column for cases which do not come under any other form than the obviously clinical cases.

I am afraid these notes are very scrappy, but they will serve the purpose, I hope, of initiating a good discussion.

Mr. FYRTH mentioned his difficulties with regard to valuation and considered that farmers should have a claim if a veterinary considered an animal was suffering from Johnë's disease.

Replying to questions, Mr. EDWARDS (Ministry of Agriculture), said the Order was not intended to apply to apparently fit cows although they were tuberculous.

Mr. R. E. L. PENHALE said his reading of the Order was that it applied to animals that were fit for nothing but the knacker.

Mr. EDWARDS: If there is no clinical evidence, but only tuberculin reaction without any other symptom, it does not bring the animal within the scope of the Order. Tuberculin reaction alone is not sufficient.

Mr. GIBBINGS thought the County Council would have simplified the question of compensation if they had fixed a maximum amount for an emaciated animal, not suffering from tuberculous mastitis.

Mr. J. P. PENHALE mentioned the case of a bullock sent to him by the police. He saw no sign of tuberculosis and thought the animal was suffering from Johnë's disease. It was slaughtered and there was slight tuberculosis. The owner sent in a claim for £20.

The CHAIRMAN asked for a definition of "in-contact animals."

Mr. EDWARDS pointed out that it did not arise under the Order. When the Local Authority called in an inspector to examine an animal, the inspector was required by the Order to examine the animal and any other animals which he considered it necessary to examine.

The CHAIRMAN observed that clinical inspection should be made of all in contact bovine animals.

Mr. EDWARDS said the Order did not aim at stamping out tuberculosis, but at getting rid of it in advanced forms and in reducing danger to human life by contaminated milk.

The HON. SECRETARY raised the question of a month's isolation of a suspected animal. In Devon, if at the end of a month a police constable thought the animal was not any worse nothing was done; if it was worse it was reported to the veterinary inspector. Had the police any power to hold up an animal for a month? Owners resented it and said that if they had any more cases they would not report to the police.

Mr. EDWARDS replied that he had no knowledge of a month's isolation being continued.

Mr. PERRY mentioned that he was inspector for Gloucester and there the Order had been working very smoothly. They were rather kept under in certain respects by the County Council. The Council would not allow him to apply the tuberculin test unless he told them the cow should be tested, but by return of post permission was given. As regarded valuation, there was a clause allowing the inspector to agree the value with the owner up to £20. If the animal was valued over that amount, the Council arranged for a valuer to be called in. He condemned cows with clinical symptoms and they were valued up to £16. In one case the cow was giving three gallons of milk a day and was worth the money. There was difficulty in distinguishing Johnë's disease from tuberculosis and it would be so much the better if Johnë's disease was brought within the Order.

Mr. EDWARDS: The Ministry have not the power to do that unless the Treasury authorises them to spend the money. They would not bring it in under the Tuberculosis Order.

Mr. PERRY: It would cost them less in compensatiln than what they are paying now in extra examinations.

Mr. R. E. L. PENHALE, proposing a vote of thanks to Major Ascott for opening the discussion in so clear and thorough a manner, said he was sure they had all benefited. Mr. EDWARDS seconded, and the motion was heartily carried.

Mr. Masson was elected as representative on the Council of the National Association, in addition to the Hon. Secretary.

EXHIBITS.

Mr. GIBBINGS showed a special pair of calipers that he found very useful in measuring the thickness of the skin during the intra-dermal tuberculin test. It was made particularly for motor work and could be obtained at a garage.

Mr. MASSON exhibited a waterproof overall for use in parturition cases; it was made of rubber material.

On the proposal of Major ASCOTT, seconded by Mr. WRIGHT, Mr. Masson was thanked for presiding.

Mr. THORBURN said they could not close the meeting without thanking the retiring President for all he had done for the Division during his term of office. It had

(Continued at foot of first column next page.)

NOTES AND NEWS.

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events.

April 30th.—Meeting of the Royal Counties Division at Weybridge.
May 6th.—Meeting of the Central Division at 10 Red Lion Square
„ 7th.—Last day for nominations for election to Council, R.C.V.S.
„ 12th.—Meeting of the Scottish Branch, at the Station Hotel, Perth; luncheon at 12 noon.
„ 21st.—R.C.V.S. Annual Report and Voting Papers issued.
„ 26th.—Entries for D.V.S.M. Examination due.
„ 27th.—Last day for return of R.C.V.S. Voting Papers.
June 3rd.—R.C.V.S. Annual General Meeting.
„ 21st—26th.—D.V.S.M. Examination.
„ 30th.—R.C.V.S. Annual Dinner, Hotel Victoria, London, 7-30.
July 1st.—R.C.V.S. Committee Meetings.
„ 2nd.—R.C.V.S. Committee and Council Meetings.
„ 9th.—R.C.V.S. Written Examinations.
„ 13th.—R.C.V.S. Oral Examinations commence in London.

July 27th-30th.—N.V.M.A. Congress at Dublin.

We notice, with a gratification that will be shared by all our readers, that in the results of the Examination for Call to the Bar announced in *The Times* of April 15th, the name of Mr. Fred Bullock, Secretary of the Royal College of Veterinary Surgeons, occupies an honourable place in the final examination. Out of eighty-nine examinees, sixty-two passed, and Mr. Bullock's name is eighth on the list in order of merit. He will be called to the Bar on June 16th at Gray's Inn. The new status of the Secretary will be an invaluable aid to him in furthering the interests of the profession, and we take the keenest pleasure in expressing to Mr. Bullock, on behalf of our readers, most hearty congratulation on the extremely successful outcome of his efforts.

(*Continued from previous page.*)

been an arduous year, necessitating the holding of special meetings involving a good deal of time, but he had carried out his duties unflinchingly and the Division were deeply indebted to him. Mr. BLACKWELL seconded and it was carried by acclamation, Mr. MASSON suitably replying.

The company then took tea together and indulged in the friendly intercourse which always makes an enjoyable termination for a successful Divisional meeting.

R. BARONS NELDER,
Hon. Secretary.

MEAT INSPECTION.

In the House of Commons, on Thursday, April 15th, Mr. FENBY asked the Minister of Health how many health authorities have appointed whole-time meat inspectors; how many have appointed part-time qualified meat inspectors; and how many have attached the duty of meat inspection to officials not specifically qualified for the purpose?

Mr. CHAMBERLAIN: I regret that I cannot give precise information on these points. Except in a few cases, where veterinary surgeons have been specially appointed for the purpose, meat inspection is usually performed by sanitary inspectors, and I am glad to say that the number of these officers who, in addition to the ordinary training in meat inspection, have obtained a special qualification in the subject, is rapidly increasing. In most of the principal boroughs and in many of the larger urban districts, whole-time food inspectors possessing this qualification are employed.

Mr. FENBY: Am I to understand that the right hon. gentleman is perfectly satisfied with the efficiency of the meat inspection throughout the municipalities?

Mr. CHAMBERLAIN: I would not say that I am perfectly satisfied, but I am satisfied that the efficiency is rapidly increasing.

At a recent meeting of the Diseases of Animals Committee of the Devon County Council, it was reported that, under the Tuberculosis Order, 31 animals were slaughtered in January, of the value of £302, and that £128 was paid in compensation. In February there were nine slaughtered of the value of £71, and £41 compensation was paid; in March, 13, valued at £151, for which £79 was paid in compensation. These figures showed a decrease.

The consideration of the appointment of a full-time veterinary officer under the Tuberculosis Order was deferred for six months. It was stated that fees and expenses paid to 25 veterinary surgeons for about four months from September, totalled £669. The Committee considered the present arrangements should continue for a time, so that more information could be obtained before discussing the appointment of the new officer.—*Devon and Exeter Gazette.*

The Editor acknowledges the receipt of the following:—

Reports of meetings of the North Wales Division and Lancashire Division, from Messrs. J. H. Wynne and J. Spruell, respective Hon. Secretaries.

Communications from Mr. R. Bryden, Captain W. T. Olver, Major-General H. T. Sawyer, Professor B. Gorton, Messrs. L. W. Wynn Lloyd, H. C. Reeks, senr., H. G. Simpson (Penang), W. S. Stevens, Major C. H. S. Townsend, W. L. Weipers, Captains A.W. Noel Pillers and W. G. Wragg.

National Veterinary Medical Association of Great Britain and Ireland.

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All communications relative to the literary side of the Veterinary Record must be addressed to the Assistant Editor, "Veterinary Record," 10 Cray's Inn Square, W.C.1

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Adhesive Plaster, 1in. by 6 yds. in tins	4/6 doz.	**Syringes,** Glass, 3oz.	6/- doz.
Drainage Tubing (6 pieces assorted sizes in glass tubes)...	1/6 tube.	**Syringes,** Hypo., 1 c.c., in metal case...	2/4 each.
Cradles, Horse	4/6 each.	**Trocar and Canula,** Gunn's	3/6 each.
Drenching Tins	9d. each.	**Trocar and Canula,** McDowell's	2/6 each.
Enema Pumps	18/6 each.	**Tracheotomy Tubes,** Arnold's Pattern No. 4 and various	3/9 each.
Balling Guns	4/- each.	**Tracheotomy Tubes,** Field's Army pattern	5/9 each.
Knives, Searching	7d. each.	**Post Mortem Sets,** in leather cases	30/- case.
Knives, Symes Pocket folding or straight	2/9 each.	**Suture, Wire,** reels	6d. reel.
Mouth Gags (Butler's pattern	11/3 each.	**Suture Wire,** ounces	6d. oz.
Muzzle, Chloroform	7/6 each.	**Sterilizers,** Nickel Plate on copper 9½in. by 3½in. by 1¾in., with lamp	7/- each.
Needles for Hypo. Syringes (1 c.c.)	1/- doz.		
Needles, Suture	1/- doz.	**Sterilizers,** Fish Kettle, nickel plate on copper, with lamp.	
Probes, metal, assorted	6/- doz.	18in. by 7in. by 5in.	30/- each.
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Plates for Tooth Rasps, 3¼in. by 1in.	2/- doz.	Ditto, 17in. by 5¾in. by 4½in.	27/6 each.

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